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I

CLOTHES AND THE MAN

"When it comes to style in literary art," said the Professor, "I agree with Anthony Trollope. I hold that gentleman to be the best drest whose dress no one observes."

There was a sudden tho noiseless awakening among his auditors, and he felt himself all at once the cynosure of neighboring eyes. Twenty-four pairs of coeducational optics converged upon his person, and the remaining three members of the class were sympathetically interested, if not directly.

The Professor completed his lecture as best he could, and withdrew. Even an ordinary display of attention would have surprized him; but he had *never* been lookt at in *that* way before. I have it on the authority of one of the students herself, who canvassed the class that very morning, that there was no one in all the room who had ever before paid particular attention to what sort of clothes he wore; or had the least recollection of ever having seen him in any other suit than the one he then had on.

When they came to reflect, too, no one could recollect having seen him wear any other style of collar and tie, and had as little remembrance of any variation in his hat, shoes, or overcoat, or manner of wearing his hair. Here was a mystery, indeed!

Could their eyes have followed the Professor home, they might have been still more mystified. He went straight upstairs to his dressing-room, divested himself of the

clothes in which he had lectured, and rearrayed himself in a suit which was saved from being the exact counterpart of the first only by displaying certain marks of age: several broad and shining areas, a few frayed edges, and here and there a patch—not purple. Thus attired, he plunged into his old study, sank into an old chair, before an old table strewn with old books, picked up an old pen, dipt in into an old ink-well, and began to write on his great work, *The art of things ancient.*

Do not be over-hasty in your conclusions. It was a more intimate cause than mere economy which lay at the foundation of the Professor's practise.

What was it? It was affection; that's all. He wore those old clothes because they were *his*, and had been his for a long time; he felt at home in them; they were a habit, and as much a part of him as habits usually *are* of men. When he had them on, and took his place among the familiar surroundings of his study, he felt a release of body and spirit; there were no pressures nor strictures to annoy and irritate him, no suggestions of that tyranny of environment which makes miserable the life of men who consider the body more than raiment. He was at ease, as in the society of old and trusted friends.

"An old coat is an old friend, old Binnie," says Colonel Newcome. "I don't want to be rid of one or the other."

But it was not merely selfish affection and love of ease which prompted the Professor's partiality for old clothes. His philosophy of old clothes was begotten of art as well as affection.

Of course, you must not minimize the importance of inclination, I hasten to tell you that this philosophy of the Professor's was very much like other philosophies which have to do with actual practise in life; it was quite as much a justification of past and present conduct as it was a principle of proposed conduct. Philosophy, no doubt, *is* the guide of life; but life is quite as much the guide of philosophy. It would be near the truth to say that they are really mutual guides; or rather, twin explorers looking for a land flowing with milk and honey—which, you may be sure, I mean to be

only a figure for the harmonious and restfully righteous country where everyone knows exactly what he wants to do, and why he wants to do it, and why it is right for him to want to do it, and—in short, that ideal country.

> Where all the children dine at five,
> And all the playthings come alive.

To be sure, no explorer has yet reached it; but think of the delight of making adventurous dashes for it!

Art and old clothes? You are right in thinking it a strange collocation. Some people might even call it offensive. Rummage sales and old clothes, missionary boxes and old clothes, charity and old clothes, poverty and old clothes, microbes and dirt and disease and old clothes—but who ever heard of old clothes and *art?*

I shall have to ask you to be serious for a moment, while I elucidate. The matter is not involved, nor so unfamiliar as it seems.

The Professor had read and heard and talked a great deal about sincerity in art, about fitness, harmony, reserve, repose, unity, and all the other qualities indispensable in the masterpiece of architecture, sculpture, painting, poetry, music; about the inevitable word, the inevitable line, the inevitable proportion, etc. As a matter of fact, he had never heard of a work which displayed all the indispensable qualities, or very many of them; and, indeed, he sometimes thought it was the attributes of the person who lookt at the masterpiece, rather than the work itself, which made it art.

But that needn't detain us. Having always been thoroly possest by the desire to relate art intimately with life (*art for art's sake*, as it was ordinarily mouthed, seemed to him little better than a jingling vapidity), he had early begun to apply its principles to character and conduct, and had gradually come to look upon life itself as the Great Art, and the individual human being as its greatest potential manifestation. Human personality—appearance, manner, character, conduct—was susceptible of being wrought into a composition indwelt by all the essentials which made the painting great, or the statue, or the temple, or the poem, drama, or symphony.

A human life might be a masterpiece: might have its perfect rhythms, like the painting or the poem; its clearness of outline, like the statue; its line and color scheme, like the picture; its proportions, like the temple or cathedral, to give it equilibrium and repose; or its theme, like the symphony or drama, to give it integrity. Further, as with other arts, the absolutely indispensable thing in the art of life was unity; all other qualities were more or less idle, except as they contributed to it. Life had its details, too: rhymes as well as rhythms; variations as well as the main theme; intricacies of anatomy, and play of light and shade, as well as the main contour; minor as well as principal harmonies of tone, color, and line.

Like all other arts, too, life had its decorations—the amenities of appearance and conduct. This is where the clothes came in. They were a decorative detail—the color and line decoration of the human temple, the drapery of the statue, the frame of the picture. They were not absolutely essential to content—no more than flutings and fret, palmette and astragal, triglyph and metope, were essential to the uses of a Greek temple; but they were necessary to its ready interpretation by the eye, and consequently to the perfection of the whole as a work of art. Clothes were no more to be slighted or lightly varied than complexion, or physical outline, or conduct itself.

And clothes were just as inevitable, esthetically speaking, as words, or lines, or proportions, or harmonies of sound and color. Just as there was a one and only metrical scheme for a given poem, one frame for the painting, one scheme of linear decoration which was fit above all others for the temple or the vase, so there was one costume for the individual person which was more fit than all others—a single inevitable combination of material, color, line, trimming—that best aided in the interpretation of the human work of art.

"A man must have one good coat," says the Colonel again; "I don't profess to be a dandy; but get a good coat from a good tailor, and then have done with it."

And this is where *old* clothes came in. When this one combination had been found, it was to become a permanent

part of the individual, only less inseparable from personality than hair, complexion, feature, or general quality of conduct. It was to remain a part of him until such time as change of occupation, age, fortune, or mental and physical habit (for the human work of art was a living, changing thing) necessitated some alteration in order to preserve unity in the whole. A man was not to be a man *and* a costume, or a man *in* a costume, but a *costumed man*. He was to be known and thought of, clothes and all, as a whole. The mention of his name was to call up, at all times and to all people, the same image.

The Professor's philosophy of old clothes was only part of a wider system. What applied to costume was of course applicable to other details: to style of hair and beard, for example, to manner of speech and to bearing, to traits of character.

Nor was this all that entered into the composition of the human work of art. A man was to be known in the most intimate connection with all his appurtenances and surroundings. The house in which he lived was to be an integral part of his personality—to represent and reflect his character and tastes. Its furniture, its architecture and arrangement, all its appointments, were to be only an extension of *him*. The paintings that hung on its walls, and the books that occupied the shelves of his library, the rugs that covered the floors, the songs he sang and the music he played, were to be a part of *him*. The whole was to be a *home*, and a permanent one, interference with any detail of which would be a mutilation of its owner's personality.

And so with his occupation, and so with the friends who shared his life; and so with his diversions, and with the neighborhood he lived in. He, with all things whatsoever that went together to make up his personality, should be so mingled and blended as to form a harmonious and unified whole, a living, organic being—a masterpiece of art. When the place that knew him should know him no more, it was to be no ordinary death. He was not wholly to die; there were to be left behind him ten thousand witnesses, ten thousand parts of himself, all crying out in bereavement.

But it was to be the destruction of an identity: the harmony would labor from the lost chord; the unity would have gone from the picture.

Humanly speaking, of course. In the Divine mind, the Professor reasoned with himself, it must be that the conception, perfection, and destruction of the human work of art was only a detail in the Universal Masterpiece.

The Perfect Eye contemplated in

> Life, death, and that vast forever,
> One grand, sweet song.

There *were* really no contradictions, no discords, no failures, no misfortune, no death—if one could see things as they were. The chaotic world of jarring atoms had been wrought once for all into unity by the Great Artist. What seemed to mortal ears the din of titanically discordant noises was only a detail in the music of the spheres:

> From harmony, from heavenly harmony,
> This universal frame began:
> From harmony to harmony
> Through all the compass of the notes it ran,
> The diapason closing full in Man.

Now, perhaps, you begin to see what the Professor meant. To become a harmony after his notion, you had to grow old, and you had to grow old in company with all the possessions that became part of you. You ripened and mellowed, after long time, into a unity of oldnesses: old neighborhood, old house, old occupation, old friends, old clothes, old pictures, old music, old habits, old books, old thoughts, old religion. You were like the violin—or the meerschaum pipe—or the poem. Hear the inspired words of the Autocrat:

"You don't know what I mean by the *green state*? Well, then, I will tell you. Certain things are good for nothing until they have been kept a long while; and some are good for nothing until they have been long kept and *used*. Of the first, wine is the illustrious and immortal example. Of those which must be kept and used I will name three—meerschaum pipes, violins and poems. The meerschaum is but a poor affair until it has burned a thousand offerings to the cloud-compelling deities. It comes to us without complexion or flavor—born of the sea-foam, like Aphrodite, but colorless as *pallida Mors* herself.....Now, you know very well that there are no less than fifty-eight different pieces in a violin. These pieces are strangers to each other, and it takes a century, more or less, to make them thoroughly acquainted. At last they learn to vibrate in harmony, and the instrument

becomes an organic whole.....Don't you see that all this is just as true of a poem? Counting each word as a piece, there are more pieces in an average copy of verses than in a violin. The poet has forced all these words together, and fastened them, and they don't understand it at first. But let the poem be repeated aloud and murmured over in the minds muffled whisper often enough, and at length the parts become knit together in such absolute solidarity that you could not change a syllable without the whole world's crying out against you for meddling with the harmonious fabric.....Now I tell you that a poem must be kept *and used*, like a meerschaum, or a violin. A poem is just as porous as the meerschaum; the more porous it is, the better. I mean to say that a genuine poem is capable of absorbing an indefinite amount of the essences of our own humanity—its tenderness, its heroism, its regrets, its aspirations, so as to be gradually stained through with a divine secondary color derived from ourselves. So you see it must take time to bring the sentiment of a poem into harmony with our nature, by staining ourselves through every thought and image our being can penetrate."

What matter for regret, thought the Professor, every time he read this favorite passage, that the Autocrat had not included old clothes, too, along with the poem, pipe, and violin! Clothes, too, were raw and discomforting in their green state. He had hated new suits ever since his boyhood days, when his great annual affliction had been the first appearance in them at Sunday school. They were harsh and unmelodious, like the new factory-made violin; rigid and glaring, like fresh marble; characterless, like the unused pipe; awkward and unfriendly, like the new poem. But how comforting and faithful in their age!.....

I suppose it was only to be expected. You have all along had your attention fastened more or less on the part of clothes in the Professor's philosophy, and have lost sight of its broader aspect.

As a matter of fact, the Professor would not have insisted upon anyone's wearing absolutely the same costume thruout a lifetime. Nor would he have denied that his wife lookt almost equally well in several different gowns and hats. He knew, too, that men appeared from time to time in new suits without seeming ill drest even to his fastidious eye.

He was willing to compromise; in view of the fact that the duties of professors and their wives were multifarious and exacting, he felt willing to concede occasional changes of costume to correspond to various phases of activity. After

all, a college professor's wife was—or tried to be—about ten different beings; and the gown you wore to the annual reception wouldn't serve to wear while you were patching professorial old clothes or tending baby.

But it is nevertheless likely that you have thought of the Professor more than once during these past few minutes as a heretic. And so did the professor of household decoration, to whom, as the member of the faculty most likely to be genuinely interested and capably critical, the Professor first went with his theory after he had reduced it to a state in which he thought it manageable.

The professor of household decoration had no inconsiderable respect for him as a teacher of the classics, which vaguely represented to her that wisdom of the ancients of which her own subject, because of its extreme youth, seemed to stand in need.

But this was too much for her.

She was calm enough during other parts of his exposition, but every time he touched on clothes she was visibly agitated, as they say in novels.

At last she broke out.

"What!" she cried, "the same suit of clothes, the same dress, the same hat, a whole life long? Never refurnish or rearrange your rooms? Never retrim a hat or turn a dress, or change the style of your sleeves? You surely can't mean that! What monotony! and what awkwardness and embarassment, with the same costume, or even the same style of costume, year in and year out! What out-of-jointness with the times! What would you do with the FASHIONS?"

She stopt, out of breath.

This was disconcerting, coming as it did from a source which the Professor had expected to find eminently practical, and above petty considerations. But he stood his ground.

"Fashions?" he replied, "Why, there wouldn't be any fashions; neither old fashions, nor new, nor any other kind. What *are* fashions, anyway?"

"I'll tell you what they are," he went on, without waiting for her to formulate a reply. "They are loud and glaring extremes invented by salaried employees of great merchants

to catch the attention of the multitude, and stimulate trade. Coats are too long this year because a contrast to the too short of last year is necessary if the sales are to be good. Real art in clothing would be a catastrophe to clothiers. Fashions are art only by accident. Did you ever think of that?"

She lookt as if she hadn't, and he followed up the advantage he seemed to have gained.

"You think you are gratifying your own sense of art by keeping up with the fashions," he said. "The truth is, you are only gratifying someone's else sense of commerce—and your own vanity. Did you ever stop to analyze that feeling of buoyancy and exaltation you have when you come out in a new hat or gown? That's not caused by the art of your costume at all! It's only your vain consciousness of the interest and approval (often only fancied) of others—and *that* is based on nothing but mere smartness or up-to-dateness."

"No," he continued, gathering warmth. "There would be no fashions; there would be only art! There would be an end of all this everlasting change that confuses the identity of people, and destroys the equilibrium of society. How is a man to *know himself*—or anyone else—if we are to be eternally masquerading, wearing disguises instead of costumes? No, you'd get the dress and hat that really belonged to you, and you'd always be looking your best. Did you ever hear of anyone's proposing a change in the drapery of Raphael's Madonnas, or in the color scheme of Titian's costumes? or a change of style in the drapery of the women of the pediment east of the Parthenon? or a redistribution of the ornament on the temple itself, or a change in the color of its marble? or a transposition or substitution of words or notes in our great poems and songs?"

"That's the way it ought to be with suits of clothes," he concluded, when the tide of his eloquence had poured itself out, "and that's the way it ought to be with dresses, and hats!....."And then,"—here a new idea came to him—"after a year or two you'd be so accustomed to putting them on that you'd never be late for lectures or church.....And

think of the economy of it, when you wouldn't have to order and retrim and make over every season! How much more time to be about *real* business, and how much more money for charities!"

The professor of household decoration sniffed, and shook her head.

She could have argued it out; was she not a product of coeducation in the twentieth century, and hadn't she taken higher marks in logic than any one of the fifty men in the class?

But she chose the shorter and more satisfactory method of settling the question, and said, in the most smilingly unconvinced way:

"That's just like a man!"

The Professor endured this demolition of his theory with philosophic resignation. Next time, he would go for sympathy to someone with broader ideas of art—or a smaller salary. Necessity might be the mother of art, as well as of invention.

With an apology to the professor of household decoration for the warmth of his language, and a complimentary reference to her Scheme 199 for the decoration of a college professor's living room, salary $600, which he noticed in outline on a chart, he took his leave.

"A rather agreeable person," she thought; "but with very peculiar ideas about dress."

GRANT SHOWERMAN

THE UNIVERSITY OF WISCONSIN

II

THE ORGANIZATION OF A STANDARD COLLEGE[1]

My first experience with a college faculty was at Williams College in 1886–7, when I was instructor of Greek there, and used weekly to attend the old-fashioned faculty meeting which had been established from time immemorial. All questions were discust by everybody; discussion was interminable; action on any subject was most difficult to secure. Personal differences sometimes developed; and the general impression left on my mind is that of a big family council talking things over at wearisome length, and with difficulty getting results. It is needless to say that Williams College, like most other colleges of the United States, has long given up the attempt to administer the business of college life by a weekly general faculty meeting. The pressure of increasing college business has made this primitive, simple democracy impossible.

Before I became President of Whitman College, I visited Stanford University, in 1894, on my way back from the Hawaiian Islands. I spent the day with President Jordan, who seemed to take a personal interest in me because I was the president-elect of a little college in the Pacific Northwest. At the end of the day, he said: "I have one piece of advice to give you; never hold a faculty meeting." When I asked him the reason for this strange advice, which I confess thoroly startled me, he replied that the holding of faculty meetings inevitably led to differences of opinion in the faculty, and that the best way to avoid the forming of parties in the faculty was never to get the faculty together except perhaps for a yearly meeting.

It is needless to say that I did not follow his advice on becoming President of Whitman College. I found an

[1] Paper read before the Conference of the Colleges of the Interior, at Drury College, Springfield, Mo., April 25, 1912.

institution of very few students and a faculty of only eight members. The administrative problems were slight and the chief work to be done consisted in the development of relations with the outside world and the securing of money and of students. As the institution grew larger, and the faculty increased in number, the original simple democracy, whereby all members of the faculty past judgment on every question, was naturally modified by the appointment of committees, to each of which was delegated some specific function. The faculty, as in most of the smaller American colleges, was an undefined body without precise duties and with no constitutional organization.

The development of committee form of government continued until at the end of last year we had some sixteen committees to look after the necessary functions of college administration, with each member of the faculty on at least two, and perhaps three, committees. These committees had in no case power to act unless specifically directed by the faculty, and the work of each committee was almost invariably done by the chairman, in many cases the committee being not even called together. Since any piece of business must necessarily be assigned first to a committee and then reported on by that committee to the faculty, it came about that a serious delay frequently resulted, and that matters which might be acted on promptly were deferred for weeks, sometimes for months.

Before outlining a plan of organization for the more effective administration of college life, let me remind you of the three fundamental problems with which the college has to deal. These are, first, the curriculum and its administration; second, the supervision and direction of student life; and third, faculty organization and administration. With the first of these problems I am not now concerned, but by the organization of a standard college I mean the adequate solution of the two remaining problems, viz., the supervision and direction of student life and faculty organization and administration.

Within the last few years certain definite criticisms have

been made of the American college, which I briefly summarize:

(1) The problem of the direction of student life has not been sufficiently recognized. The administration of the curriculum has usurped the chief place in our attention, and the question of personal care for each individual student has fallen into the background. The college looks carefully at the scholastic standing of the student, and many institutions now pride themselves upon the number of freshmen who are "plucked" each year for lack of scholarship, but the greater part of student life is outside the classroom, and an institution has not done its full duty by the students who are entrusted to it when it relies solely upon scholastic standards for directing and moulding student life. The inefficiency of the American college lies largely in this field, partly because of the absence of a sense of responsibility for extra-scholastic activities, and partly because of an inadequate organization.

(2) The teaching in the American colleges has been exposed to well deserved criticism. I believe that there is no department in the field of American education where methods of teaching have been so generally poor, so lacking in sound pedagogical principle, as in the American college. I have had personal experience with a number of institutions, and as I look back upon my educational experience it seems to me that in most cases the teaching that I found in college was singularly poor. I do not believe that the best high schools of the present day would tolerate for a single semester the kind of teaching which I found in some of our best colleges by college professors of eminent scholarship. The chief need in the world of American education at the present time is an improvement in teaching methods, and the quality of our education will not become vitally effective until the quality of American teaching has radically improved. The American college is perhaps the chief offender in this respect, tho lack of adequate supervision is characteristic of the entire American educational system.

(3) Besides these points, the lack of adequate personal

direction for student life, and the lack of supervision for teaching methods, the American college, with its old democratic method of general faculty control, is cumbersome, dilatory, and inefficient. I wish to suggest a plan of organization which we are now introducing at Whitman College, and which will, I believe, effectively meet these valid criticisms. The plan aims to supply an organization for the more efficient direction of personal student life, responsibility for the stimulation and supervision of teaching when necessary, and the prompter and more efficient administration of college affairs.

A good many colleges have of late been trying a different experiment to solve the first problem, viz., the appointment of a single dean in colleges for men, to have entire charge of the discipline and personal supervision of the students. Such an officer relieves the faculty practically of all responsibility in such matters, attends to the recording of absences, receives excuses, and is supposed to exercise a close paternal supervision over the life of the institution. An ideal man in such a position may accomplish a great deal by the power of warm sympathy with students, sound judgment, and impressive personality, but a fundamental objection to the plan lies, in my mind, in the fact that it relieves the members of the faculty of their sense of responsibility for directing student life. In a small college, where the influence of personality is the chief asset and claim to distinction, it is important that each member of the faculty should be quickened to a high sense of responsibility for interest in students outside of the classroom. I believe that a more effective organization can be formed to throw back upon the individual members of the faculty, under proper leadership, the responsibility for intimate personal acquaintance and friendly relations with the students. The most important thing which you can do for the young men and women who go to your institution is not just to give them vigorous and stimulating teaching in the classroom, but to associate with them in such human and easy relationships that the influence of your faculty's culture

and spiritual life will affect them directly and permeate the whole student body. The device of a single dean without other organization does not encourage this tendency. Moreover, it leaves the second problem unsolved, or complicates it by dividing authority between the dean and the faculty. And now to my alternative solution:

The work of a college is divided into five different departments: the executive, the financial, the pedagogical, student life, and college extension.

(1) In a standard college the president has his functions largely in the first of these departments, the executive. He is not a teacher but a business organizer, who must give inspiration to all phases of college life and be a safe guide in the development of the institution. In most cases his activity is necessarily extended over into the second department, the financial, but it is to be hoped that college presidents will some day be relieved from the necessity of being chiefly money getters.

(2) The financial department of a standard college need not be considered by me at any length. It necessarily involves a treasurer, who is responsible for the keeping of the endowment funds of the institution and their proper investment; and an assistant treasurer or bursar, who will take charge of all expenditures for current expense and supervise the entire plant. A modern system of bookkeeping must be installed which will give an accurate and up-to-date account of the finances of the institution at any given date. If, in addition to these two officers, the college is fortunate enough to secure the services of a financial agent, or secretary, who is able to procure for it the funds which it invariably needs, its financial organization will be ideal.

(3) The pedagogical department has for its object the securing of the most vigorous and effective teaching in the best possible environment. It includes the care and development of the college library, the common laboratory of all departments, the development and correlation of all the laboratories, the function of recording the grades of all

students, and the function of supervision and stimulation of the teachers of the institution. That college is truly efficient whose pedagogical department is alive and active. A well equipped and up-to-date library, a thoro system of records by which the full data, both scholastic and personal, concerning every student are immediately available to a member of the faculty or a parent, and a system for what I call pedagogical stimulation, will make a college far more efficient than most colleges are at the present day.

(4) The department of student life is fully as important as the pedagogical department. What are the agencies by which you benefit your students outside the classroom? You will, I think, all agree that the human relationships which you can establish with your students are the most valuable influence to them. You have faculty members in the student clubs, or fraternities and sororities, and the influence of such a member can be of extraordinary value. You have a daily chapel exercise which is supposed to develop their religious nature, and in athletics, debating, and the giving of plays, a few students come into outside relations with certain members of the faculty, but is there any carefully devised plan for organizing these haphazard relations? I believe that a great deal more can be done to promote a keener life on the part of our students by assigning some phase of this duty to individual members of the faculty, with full responsibility under proper leadership. I do not believe in undermining student initiative or developing an institution where the influence of the faculty is so strong that the independence and initiative power of students will be diminished. The ideal adjustment is where a close and friendly coöperation is found, where the faculty enter naturally and helpfully into the various fields of student life, and the students are thereby stimulated to a finer and more vigorous life, intellectual, moral and social, immeasurably superior to that of the little country town or crude western environment from which most of them have come.

(5) In the department of extension I would include that

work of all those present faculty committees which are looking out upon the world for the general purpose of securing students and extending the influence of the institution. To such committees as those on admission, on catalog, on classification, on secondary schools, on publicity, and on printing, is now frequently added a committee on extension work which endeavors to minister to the neighboring and local communities more directly than was common in the past.

The plan of organization which I suggest is that of, first, having a separate administrative head for each of these five departments; and since the president and treasurer are the natural heads of the first two departments, the executive and the financial, the plan involves the establishment of three new administrative officers, to be selected out of the faculty (whether permanently or by rotation is a matter for difference of opinion), these heads, or deans, to be given responsibility for the general direction of the work of their respective departments. Then, second, in each of these departments, under such a more or less permanent leader, I would assign the members of the faculty each to some specific function, with power to act under certain cases, with a weekly conference of the department for wider questions, leaving new questions, or those involving important principles, to be referred, when necessary, to the full faculty at its monthly business meeting. By this plan, for example, the pedagogical department would be organized by a chairman, or dean, and with at least three specific functions, viz: the library and laboratories, records, and stimulation of teaching. The science heads should submit their requisitions for apparatus to be properly equalized by this department. It should keep complete records, personal and scholastic, of every student, undergraduate or alumnus. It should devise plans for stimulating the entire teaching force. The department of student life would be organized with a chairman, or dean, and individual members of the faculty would be given such specific functions as the matter of calendar, degrees,

examinations, graduate appo ntments, lectures, physical training, religious life, and social life. I name these as illustrations, and not because I think they represent a perfect classification of the functions which would necessarily belong under a department of student life, but instead of having a committee on degrees, for example, or on calendar, I would have a single member of the faculty take charge of that matter, to investigate where necessary, to act when action is called for, and to confer with the whole department at its regular meeting, where necessary. In case of unusually important questions, the department could refer the matter to the faculty, but in most cases the individual would be able to act, and the departmental committee would have only occasional appeals. Each major-professor is expected to act as the adviser and friend of each of those students who have elected his study as their "major." In a similar way the extension department would have a chairman, or dean, at its head, and would plan for developing the extension work of the institution under his chairmanship, members of the faculty becoming responsible individually for such matters as admission, the catalog, the classification of students, extension work, scholarships, secondary schools, publicity and printing. Those of us who have had much experience with the inner life of a college know that the work of such present standing committees is almost invariably done by one man, and that the organization of a committee of three or more is a superfluity and cause of delay. I would recognize the importance of giving responsibility to individuals, and would ask a member of the faculty to master one of these separate functions, giving him power to act in all matters which did not involve principles for faculty consideration or the outlay of money, which would necessarily be referred to the financial department and its business committee. Each of these departments will have a regular office and time of meeting, with the power of revision over the work of the several individual members.

What will be gained by such a form of organization?

First, promptness; second, efficiency thru individual responsibility; third, more careful attention given by a larger number of people to the main problems of college life; fourth, the development of administrative ability in those members of the faculty who have the gift; fifth, the stimulation of the life of the institution both as regards faculty and students, by providing for a closer and keener supervision. I believe that the wholesomeness of the relations between faculty and students will not be impaired by this assignment of individual members of the faculty to specific duties. Whatever tendency to separation in the faculty might be brought about by this differentiation will be overcome by the weekly department meeting and the monthly faculty business meeting, where the common problems of the college world are talked over together.

I hope to be able to report within a year or two concerning the successful working of this plan of organization. Its aim is to render the college efficient in all the phases of its activity. The supreme question concerning any institution at the present time is how efficiently does it realize its aims. The aim of the standard college is to develop the whole man and woman into the largest mental and moral stature, and I believe that it needs to use more fully the personal power latent in its faculty.

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III

DIFFERENTIATED PROGRAMS OF STUDY FOR OLDER CHILDREN IN ELEMENTARY SCHOOLS

In attempting to compare American with European systems of education, the writer has reached the following conclusions, among others: (a) In the education of younger children, of approximately the ages 5 to 12, American elementary schools compare favorably in spirit, methods and results with corresponding schools in European countries; but (b), on the other hand, American schools are as a rule relatively inefficient, so far as the education of the large majority of children of the ages from 12 to 16 is concerned.

The following are some of the phases of this subject worthy of fuller consideration:

(a) American children go to school willingly during their earlier years. The classroom discipline in the lower grades is mild and the atmosphere homelike. Teachers are interested, and usually appear to be equal to the tasks set before them. The program of studies presents certain definite goals in reading, writing, spelling and arithmetic, in which subjects progress is, as a rule, obvious. Other subjects of study of a less formal nature, such as general reading and literature, music, drawing, hygiene, practical arts and nature study serve to vitalize the more formal subjects. The children gain steadily in powers of expression, and at the same time, grow in general experience and powers of appreciation.

(b) On the other hand, in the upper grades of the elementary schools and in the case of retarded children beyond the ages of 11 or 12, teachers in American schools often have great difficulty in making their work interesting and significant to their puplis. Some subjects, such as geography, history, and arithmetic have had their most interest-

ing phases presented in the lower grades. After the age of 12, in most American schools, little visible progress is made in ability to read aloud, to use the pen, to compose, to sing, to speak effective English and to perform the simpler operations in arithmetic. For these older pupils, educational goals, as formulated, seem to lack in purposefulness. The outlines of study in such subjects as geography, history and literature tend to be over-ambitious, whilst pedagogical methods employed in teaching arithmetic, drawing and the various phases of English expression are often unsound. In home and library reading, as a rule, older pupils continue to manifest a growing capacity and interest, but in most other subjects attention and application are weak and the results uncertain. The older and less ambitious teachers transform nearly all the work of these grades into a dull drill in which routine memorization plays the largest part. The younger and more ambitious teachers seem often to be wrestling with tasks that are beyond them. Manual training, arithmetic and history are often taught by women teachers who seem unable to make these subjects vital and significant to the boys of their classes.

(c) A considerable percentage of boys and girls of 12 to 15 years of age belong to what is known as the retarded class, being from two to five grades behind the point at which they should have been had they entered school at the usual age and made steady progress thereafter. For these retarded pupils, the work of the lower grades is manifestly unsuited. A boy of 13 in a fourth grade is usually an educational misfit of the most pronounced character no matter how excellent the teaching in that grade may be. It is seldom that teachers of the lower grades are able to take personal interest in retarded pupils. They have neither the time, ability nor disposition to deal with pedagogical problems presented by older boys and girls.

(d) At or about the age of 14 a constantly increasing number of American children enter the public high school. More than half of these, as a rule, will attend not over

two years. At present, something over one per cent. of the population of the United States is in constant attendance on secondary schools. No longer do these schools attract only the children of cultivated homes or of parents having ample means. Laborers and other persons of moderate means now send their children in large numbers to high school for one or two years of education beyond that obtainable in the elementary school. But for those pupils who stay but one to two years in the high school the usual programs of study are ineffective and barren. The first two years of the traditional high school program offers, as a rule, but a limited range of subjects and these are of an essentially preparatory nature. Algebra, geometry, ancient and modern foreign languages, ancient history, English literature, and English expression—these represent the staple program and their pedagogic treatment is commonly formal and abstract. Teachers of the first and second year subjects in the high school are often young, inexperienced and without special training. The formal courses presented in English, foreign language, mathematics and similar subjects may be the best preparation for pupils destined to finish high school work and pass into college, but any careful examination of the work of those classes of students who are not preparing for college will show that the educational outcome for them is small indeed. Not infrequently, the character of the work presented and the methods employed exert a decidedly negative influence in the shape of a destruction of intellectual interests and the creation of distaste for all forms of study and school work. Everywhere in our high schools may be found large numbers of pupils of only moderate ability and ambition who are being educated in the company of others who are destined to go to college. The less bright pupils are handicapped at every stage of their educational career. Even when commercial subjects and the practical arts are introduced into high school curriculums, these subjects are either inaccessible to first and second year pupils or else are treated in a formal manner as introductory to something more substantial to come later. It is often said that

the rapid increase in attendance on high schools is proof of the satisfactory character of their early work. There is little substantial evidence that this is the case, however. The large increase of attendance is primarily due to social changes and the ambition of parents that their children shall not enter on vocational occupations too soon and shall not in the meantime remain idle. A constantly enlarging proportion of parents desire to provide a cultural education for their children beyond the fourteenth year. They are not, however, prepared to carry the burden beyond the sixteenth year of the life of the boy or girl, the age at which the nature of the pupil on the one hand and the calls of industry on the other are apt to unite in effectively appealing to the vocational interests of young people. Nowhere in American secondary education is a systematic provision made for the cultural education of youths from 14 to 16 years of age. For pupils who drop out at this later age, therefore, the charge must hold that the latter part of their education has been relatively ineffective.

If the education of American children of 12 to 16 years of age is to be rendered more effective, several kinds of constructive action are necessary. Teachers may be better trained; more scientific pedagogical methods in subjects already taught may be devised; the active coöperation of the home and other educational agencies may be increased; and vocational schools for children over 14 years of age, paralleling schools devoted to liberal education, may be organized. Obviously, the traditional European practise of making relatively more costly provision for children of the more favored classes, as such, can not be tolerated in America. Equality of educational opportunity is to be regarded as a guiding principle in whatever may be done in public schools.

It is the belief of the writer that the most necessary changes towards rendering the phases of education here under consideration more effective are essentially administrative. They involve an increasing flexibility in curriculums and

more purposeful programs of study than are at present available. The special problems involved may be presented in the shape of a series of questions to which, for the sake of eliciting discussion, tentative answers expressing one point of view are appended:

(a) Is not the uniform program of study now commonly obtaining in the seventh and eighth grades of the American elementary school over-loaded with different subjects?

English literature, the various branches of English expression, history, geography, arithmetic, drawing, practical arts, hygiene and music are always found; attempts are constantly being made to introduce into the upper grades such subjects as foreign language, algebra, constructive geometry, bookkeeping and special phases of industrial arts. In many of these studies, the standards are necessarily superficial to a marked degree. For the teaching of some of them, schools are quite lacking in suitable equipment, and teachers are deficient in training. It is impossible to avoid the conclusion that the prevailing effort in American elementary education to keep the program of study uniform for all children alike leads to superficiality, mal-adaptation and an over-taxing of the resources of the average teacher.

(b) Is it desirable that in our American elementary schools, opportunities should exist for the beginnings of foreign language study on the part of such pupils as need or desire it, at or about the age of 12?

It is generally conceded that a foreign language, rightly taught, can be more effectively learned at the age of 12 than later. The most conspicuous advantage possesst by European school children over American is found in the opportunities afforded them to begin foreign language study relatively early. Probably few American children, as compared with European, should be induced to study a foreign language; but there are the best of reasons why opportunities should exist for those who have special talents in this direction or for whom a higher education is a matter of strong probability. It should be evident,

however, that it is easily possible to waste time in the study of foreign languages. Unless such languages are taught by effective pedagogical methods, time devoted to this field may be wholly misspent. Only in one way can such study be made effective. Special classes must be formed of those having the ability and the desire to apply themselves to the subject, and competent special teaching provided. It is evident that this can only be brought about thru the inauguration of a flexible program of elementary education for the upper grades. Obviously, objection should be made to any program of elementary education making mandatory the study of a foreign language. Attempts of this character commonly fail in the American scheme of elementary education, and it is to be expected that they should fail.

(c) Is it desirable that pupils of 12 to 14 years of age should be offered the opportunity to take substantial courses in the practical arts?

Every administrator is aware that a considerable number of boys and girls find in the various divisions of the practical arts opportunities for expression and interest not to be obtained in other subjects. The introduction of manual training and manual arts has accomplished something in this direction. Nevertheless, the $1^1/_2$ or 2 hours per week usually devoted to this subject is insufficient time in which to produce satisfactory results either for pupils or teachers. There is no defensible reason why the school day should not be longer for older children than is found in the prevailing practise at present; and there are good reasons why special classes in the practical arts, employing as much as ten or twelve hours per week, should be organized. Obviously, such courses should not be made obligatory upon all pupils but should be alternative to other types of work having demonstrated educational value. Here again, flexibility in the program of education for older children should be permitted.

(d) Is it desirable that pupils of from 12 to 14 years of age should have as an option, alternative to courses in

foreign language or in practical arts, in the elementary school, a course of from eight to ten hours per week, consisting primarily of commercial arithmetic, the beginnings of bookkeeping, business penmanship, business English and typewriting?

Such a course would offer fairly definite goals and would tend to produce on the part of pupils electing it fairly definite and tangible educational results. A certain measure of preparation for some future vocation would undoubtedly follow from this as from courses previously discust, altho the vocational aim for children of the elementary school period should never be dominant. Typewriting, business English, etc., are subjects that can readily be learned by pupils from 12 to 14 years of age.

(e) In view of the foregoing, is it not practicable and desirable, where upper grade classes are sufficiently numerous, to organize the higher work of the elementary school in such a way that certain studies such as English literature, English expression, history, civics, geography, music, hygiene, and the like shall be taken in common by all pupils; while, in addition, any one of four possible options may be taken by groups of pupils to complete their respective programs of study; these options to consist of (A) a foreign language and mathematics; (B) practical arts (for boys), arithmetic and drawing; (C) practical arts (for girls), arithmetic and art study; and (D) commercial subjects?

As the curriculum of the elementary school is now organized such alternative programs would seem to present the maximum possible adaptation to the needs of different classes of young people. Each program would involve desirable forms and amounts of general education, while at the same time providing certain studies adapted to the needs and interests of those various groups of children who would probably desire to prepare for college on the one hand, and on the other for vocational schools and for practical life.

(f) In order that such a plan might be made administratively feasible, would it not be practicable in cities and

other populous centers to establish separate schools for children from 12 to 14 years of age, leaving the education of children under 12 to local schools, staffed, perhaps, entirely by women teachers and principals?

(g) Would not such concentration of the older pupils make possible the introduction of departmental teaching, the employment of a larger proportion of men teachers, and a more satisfactory working equipment for older children?

In the city of Fitchburg, Massachusetts, is found a central school of this character, containing about one-third of the seventh and eighth grade pupils of that city. Children may come to this school from any part of Fitchburg. In it the children may take any one of four programs of study, substantially as outlined above. It is expected that pupils finishing any one of these divisions will find in the high school or in vocational schools opportunities for a continuation of their work. The advantages here found to result from the concentration of seventh and eighth grades are many. Apart from the possible adaption of the curriculum to the needs of pupils, disciplinary difficulties are lessened and a more effective contact with the high school is made possible. The *esprit de corps* of such a school becomes marked.

(h) Is the plan herein proposed an effective substitute for the intermediate high school, as this is known in certain of the western cities of the United States?

For many years articles have appeared in educational magazines defending the six years' high school plan. This is designed to have the effect of reducing the elementary school period to six years. Most of the arguments urged in favor of the six years high school are sound, provided such a high school could give due consideration to the varying educational needs of the young people which it receives. If the plan of the six years high school means that subjects similar to those now found in the high school should monopolize the program and that teaching would be mainly in the hands of young, untrained college graduates, then

there exist reasons for hoping that another approach analogous to that described above be devised whereby flexibility in upper grade work may be obtained.

(i) In a program of the kind here discust what place should be made for retarded children from 12 to 14 years of age?

Obviously, these should not be permitted to remain in the elementary schools organized for children of the first six grades. They should be brought to the same centers as pupils of the seventh and eighth grades and should there be organized into special classes, perhaps sharing in some of the departmental work of the regularly promoted pupils. For example, the practical arts work adapted to seventh and eighth grade pupils, as described above, might in large degree be suitable for retarded pupils, whereas special departmental classes in English, arithmetic, and the like, might be arranged.

(j) Would there not be a tendency on the part of all pupils to take the foreign language or literary program described above, in view of the probability that pupils having superior home advantages would perhaps seek such a course?

In some cases this result would probably follow. Much would depend upon the spirit of those in charge of the various programs. Experience already shows that the right kind of a course in practical arts would prove a very satisfactory alternative to a modern language course. No one of the above programs of study should, of course, exclude from the opportunities for higher education, but also it should be obvious that the pursuit of one of them, to the exclusion of any other would entail advantages and disadvantages with respect to the higher schools. A pupil taking the modern language and algebra program in the higher grades of the elementary school should obviously gain a year in the general high school; whereas, another pupil taking the commercial program, described above, would possess advantages in taking up high school commercial work. A pupil with the foreign language would necessarily require more time in the commercial program

and the pupil having the commercial courses in the elementary school would probably require additional time in the general high school program.

(k) In the case of a large number of children from 14 to 16 years of age what reorganization of the currently accepted program of study is desirable?

In several states, it is now an accepted policy to provide vocational schools for young people who have past the period of compulsory education, usually at the age of 14. We are justified in expecting this movement for vocational schools to develop rapidly. But in the estimation of the writer, an equally great educational need in secondary education at the present time is the organization of programs of liberal secondary education, adapted to young people who will probably leave school at or about the age of 16. To a great extent, the doors of industry and of the commercial callings are closing to youths under 16. Parents are increasingly solicitous that their children shall have the advantages of at least two years of education beyond the elementary school. The years from 14 to 16 in the life of the average young person offer great opportunities for a vital, liberal education as this affects both personal culture and civic efficiency.

The secondary school curriculum with its various programs of study now offers little of educational value to the pupil who can remain at most but two years. As indicated above, the subjects are generally preparatory to more advanced study of a general or vocational nature. Methods of teaching are formal and ill-adapted to the development of the tastes, interests and insights which should characterize liberal education. This condition obtains even in the quasi-vocational courses, such as those designed to lead to the commercial calling, and to industrial arts pursuits. In the so-called commercial program of the typical high school, the subjects of study for the first two years are commonly vocational only to a slight extent, being organized and presented rather with a view to the studies which are to be pursued during the third and fourth

years of the course. The number of students remaining thruout the course is, as is well known, small.

A complete scheme of secondary education should include not only one or more of the four-year programs as now commonly found but also, in the estimation of the writer, flexible two-year programs of study, all containing English literature, English expression, general science, social science and an option from one of the four great fields of practical arts study—namely, agriculture, industrial and practial arts, and commerce.

(1) What are the principal objections that may be urged against the administrative changes herein suggested?

These may be discust under three heads: (1) The proposed scheme, it will be claimed, is more expensive and involves administrative difficulties. To a degree these objections are well founded. The execution of the plan will perhaps involve a considerable increase in departmental teaching. Teachers under this arrangement should of necessity command better salaries. As the work is differentiated a certain amount of it should be placed in charge of men teachers only. In towns and cities of large area, it may prove necessary to give financial assistance for transportation to pupils attending the central schools, altho this is not commonly done in connection with high schools. Flexible programs of study always require considerable effort on the part of superintendents and other administrators in making necessary adjustments. Nevertheless, it is believed that both from the standpoint of expense, and from the standpoint of administrative difficulty, the changes proposed will be amply justified in the greater educational return which they make possible.

(2) It will be charged that the proposed plan is undemocratic and that it looks to a relatively early segregation of different groups of children. It should be recognized that certain faults common in European secondary education are entirely absent from the plan. In the first place, no fees are charged to pupils. Hence all of the courses are equally accessible. Again, the only qualification to be

required for entrance to any course is the ability to carry the work of that course. There is no essential reason why children of poor people should not take the longer programs, if their parents so desire. In the third place, it is assumed that the fullest possible information will be given to parents and others in an advisory relation to children with a view to assisting them in making choices of appropriate programs of study. Finally, in all programs proposed, certain subjects are presumed to be taught in common and to all pupils. There might be good reasons for organizing the classes in such a way that pupils from all divisions of a given school should be mingled in groups wherein the subjects common to all programs are taught. It is difficult to see how the operation of the proposed plan will in any way involve an undemocratic segregation of pupils according to class.

(3) It will be claimed that some of the programs involve over-emphasis on the vocational aspects of the curriculum. It will be observed, of course, that none of the differentiated programs in the elementary school or in the general high school are intended to be controlled by the purpose of fitting for vocations. Various branches of the practical arts are introduced primarily because of their administrative worth in promoting educational interests and in giving the background of reality for the more abstract studies. It is true that practical arts work, as given, should operate in such a way as to further the development of vocational ideals and should assist the pupil in finding the lines of his probable vocational strength. Nevertheless, all programs of study are only incidentally vocational. Practical arts subjects must be tested primarily by their capacity to contribute to liberal rather than to vocational education.

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IV

THE HUMANISATION OF THE TEACHING OF MATHEMATICS[1]

When the distinguished chairman of your Mathematical Conference did me the honor to request me to speak to you, he was generous enough, whether wisely or unwisely, to leave the choice of a subject to my discretion, merely stipulating that, whatever the title might be, the address itself should bear upon the professional function of those men and women who are engaged in teaching mathematics in secondary schools. Inexpertness, it has been said, is the curse of the world; and one may, not unnaturally, feel some hesitance in undertaking a task that might seem to resemble the role of a physician when, as sometimes happens, he is called upon to treat a patient whose health and medical competence surpass his own. I trust I am not wanting in that natural feeling. In the present instance two considerations have enabled me to overcome it. One of them is that, having had some experience in teaching mathematics in secondary schools, I might, it seemed to me, regard that experience, tho it was gained more than a score of years ago, as giving something like a title to be heard in your counsels. The other consideration is that, in regard to the teaching of mathematics, whether in secondary schools or in colleges, I have acquired a certain conviction, a pretty firm conviction, which, were it properly presented, you would doubtless be generous enough and perhaps ingenious enough to regard as having some sort of likeness to a message.

My conviction is, that hope of improvement in mathematics teaching, whether in secondary school or in colleges,

[1] Address delivered at the meeting of the Michigan School Masters' Club, at Ann Arbor, March 28, 1912.

lies mainly in the possibility of humanising it. It is worth while to remember that our pupils are human beings. What it means to be a human being we all of us presumably know pretty well; indeed we know it so well that we are unable to tell it to one another adequately; and, just because we do so well know what it means to be a human being, we are prone to forget it as we forget, except when the wind is blowing, that we are constantly immersed in the earth's atmosphere. To humanise the teaching of mathematics means so to present the subject, so to interpret its ideas and doctrines, that they shall appeal, not merely to the computatory faculty or to the logical faculty but to all the great powers and interests of the human mind. That mathematical ideas and doctrines, whether they be more elementary or more advanced, admit of such a manifold, liberal, and stimulating interpretation, and that therefore the teaching of mathematics, whether in secondary schools or in colleges, may become, in the largest and best sense, human, I have no doubt. That mathematical ideas and doctrines do but seldom receive such interpretation, and that accordingly the teaching of mathematics is but seldom, in the largest and best sense, human, I believe to be equally certain. That the indicated humanisation of mathematical teaching, the bringing of the matter and the spirit of mathematics to bear, not merely upon certain fragmentary faculties of the mind, but upon the whole mind, that this is a great desideratum is, I assume, beyond dispute.

How can such humanisation be brought about? The answer, I believe, is not far to seek. I do not mean that the answer is easy to discover or easy to communicate. I mean that the game is near at hand and that it is not difficult to locate it, tho it may not be easy to capture it. The difficulty inheres, I believe, in our conception of mathematics itself; not so much in our conception of what mathematics, in a definitional sense, is, for that sense of what mathematics is has become pretty clear in our day, but in our sense or want of sense of what mathematics, whatever

it may be, humanly signifies. In order to humanise mathematical teaching it is necessary, and I believe it is sufficient, to come under the control of a right conception of the human significance of the science. It is sufficient, I mean to say, and it is necessary, greatly to enlarge, to enrich and to vitalize our sense of what mathematics, regarded as a human enterprise, signifies.

What does mathematics, regarded as an enterprise of the human spirit, signify? What is a just and worthy sense of the human significance of mathematics?

To the extent in which any of us really succeeds in answering that question worthily, his teaching will have the human quality, in so far as his teaching is, in point of external circumstance, free to be what it would. I believe it is important to put the question, and it is with the putting of it rather than with the proposing of an answer to it that I am here at the outset mainly concerned. For any one who is really to acquire possession of an answer that is worthy must win the answer for himself. I need not say to you that such an acquisition as a worthy answer to this kind of question does not belong to the category of things that may be lent or borrowed, sold or bought, donated or acquired by gift. No doubt the answers we may severally win will differ as our temperaments differ. Yet the matter is not solely a matter of temperament. It is much more a matter first of knowledge and then of the evaluation of the knowledge and of its subject. To the winning of a worthy sense of the human significance of mathematics two things are indispensable, knowledge and reflection: knowledge of mathematics and reflection upon it. To the winning of such a sense it is essential to have the kind of knowledge that none but serious students of mathematics can gain. Equally essential is another thing and this thing students of mathematics in our day do not, or do but seldom, gain. I mean the kind of insight and the liberality of view that are to be acquired only by prolonged contemplation of the nature of mathematics and by pro-

longed reflection upon its relations of contrast and similitude to the other great forms of spiritual activity.

The question, tho it is a question about mathematics, is not a mathematical question, it is a philosophical question. And just because it is a philosophical question, mathematicians, despite the fact that one of the indispensable qualifications for considering it is possest by them alone, have in general ignored it. They have, in general, ignored it, and their ignoring of it may help to explain the curious paradox that whilst the world, whose mathematical knowledge varies from little to less, has always as if instinctively held mathematical science in high esteem, it has at the same time usually regarded mathematicians as eccentric and abnormal, as constituting a class apart, as being something more or something less than human. It may explain, too, I venture to believe it does partly explain, both why it is that in the universities the number of students attracted to advanced lectures in mathematics compared with the numbers drawn to advanced courses in some other great subjects not inherently more attractive, is so small; and why it is that, among the multitudes who pursue mathematics in the secondary schools, only a few find in the subject anything like delight. For I do not accept the traditional and still current explanation, that the phenomenon is due to a well-nigh universal lack of mathematical faculty. I maintain, on the contrary, that a vast majority of mankind possess mathematical faculty in a very considerable degree. That the average pupil's interest in mathematics is but slight, is a matter of common knowledge. His lack of interest is, in my opinion, due, not to a lack of the appropriate faculty in him, but to the circumstance that he is a human being, whilst mathematics, tho it teems with human interest, is not presented to him in its human guise.

If you ask the world—represented, let us say, by the man in the street or in the market place or the field—to tell you its estimate of the human significance of mathematics, the answer of the world will be, that mathematics

has given mankind a metrical and computatory art essential to the effective conduct of daily life, that mathematics admits of countless applications in engineering and the natural sciences, and finally that mathematics is a most excellent instrumentality for giving mental discipline. Such will be the answer of the world. The answer is intelligible, it is important, and it is good so far as it goes; but it is far from going far enough and it is not intelligent. That it is far from going far enough will become evident as we proceed. That the answer is not intelligent is evident at once, for the first part of it seems to imply that the rudimentary mathematics of the carpenter and the counting-house is scientific, which it is not; the second part of the answer is but an echo by the many of the voice of the few; and, as to the final part, the world's conception of intellectual discipline is neither profound nor well informed but is itself in sorry need of discipline.

If, turning from the world to a normal mathematician, you ask him to explain to you the human significance of mathematics, he will repeat to you the answer of the world, of course with far more appreciation than the world has of what the answer means, and he will supplement the world's response by an important addition. He will add, that is, that mathematics is the exact science, the science of exact thought or of rigorous thinking. By this he will not mean what the world would mean if the world employed, as sometimes it does employ, the same form of words. He will mean something very different. Especially if he be, as I suppose him to be, a normal mathematician of the modern critical type, he will mean that mathematics is, in the oft-cited language of Benjamin Peirce, "the science that draws necessary conclusions;" he will mean that, in the felicitous words of William Benjamin Smith, "mathematics is the universal art apodictic;" he will mean that mathematics is, in the nicely technical phrase of Pieri, "a hypothetico-deductive system." If you ask him whether mathematics is the science of rigorous thinking about *all* the things that engage the thought of mankind or only

about a few of them, such as numbers, figures, certain operations, and the like, the answer he will give you depends. If he be a normal mathematician of the elder school, he will say that mathematics is the science of rigorous thinking about only a relatively few things and that these are such as you have exemplified. And if now, with a little Socratic persistence, you press him to indicate the human significance of a science of rigorous thinking about only a few of the countless things that engage human thought, his answer will give you but little beyond a repetition of the above-mentioned answer of the world. But if he be a normal mathematician of the modern critical type, he will say that mathematics is the science of rigorous thinking about all the things that engage human thought, about *all* of them, he will mean, in the sense that thinking, as it approaches perfection, tends to assume certain definite forms, that these forms are the same whatever the subject matter of the thinking may be, and that mathematics is the science of these forms *as forms*. If you respond, as you well may respond, that, in accordance with this ontological conception of mathematics, this science, instead of thinking about *all*, thinks about *none*, of the concrete things of interest to human thought, and that accordingly Mr. Bertrand Russell was right in saying that "mathematics is the science in which one never knows what one is talking about nor whether what one says is true,"—if you respond that, from the point of view above assumed, that delicious *mot* of Mr. Russell's must be solemnly held as true, and then if, in accordance with your original purpose, you once more press for an estimation of the human significance of such a science, I fear that the reply, if your interlocutor is a mathematician of the normal type, will contain little that is new beyond the assertion that the science in question is very interesting, where, by interesting, he means, of course, interesting to mathematicians. It is true that Professor Klein has said: "Apart from the fact that pure mathematics can not be supplanted by anything else as a means for developing the purely logical faculties

of the mind, there must be considered here as elsewhere the necessity of the presence of a few individuals in each country developed in a far higher degree than the rest, for the purpose of keeping up and gradually raising the *general* standard. Even a slight raising of the general level can be accomplished only when some few minds have progressed far ahead of the average." Here indeed we have, in these words of Professor Klein, a hint, if only a hint, of something better. But Professor Klein is not a mathematician of the normal type, he is hypernormal. If, in order to indicate the human significance of mathematics regarded as the science of the forms of thought as forms, your normal mathematician were to say that these forms constitute, of themselves, an infinite and everlasting world whose beauty tho it is austere and cold, is pure, and in which is the secret and citadel of whatever order and harmony our concrete universe contains, it would yet be your right and your duty to ask, as the brilliant author of *East London visions* once asked me, namely, what is the human significance of "this majestic intellectual cosmos of yours, towering up like a million-lustred iceberg into the arctic night," seeing that, among mankind, none is permitted to behold its more resplendent wonders save the mathematician himself? But the normal mathematician will not say what I have just now supposed him to say; he will not say it, because he is, by hypothesis, a normal mathematician, and because, being a normal mathematician, he is exclusively engaged in exploring the iceberg. A farmer was once asked why he raised so many hogs. "In order," he said, "to buy more land." Asked why he desired more land, his answer was, "in order to raise more corn." Being asked to say why he would raise more corn, he replied that he wished to raise more hogs. If you ask the normal mathematician why he explores the iceberg so much, his answer will be, in effect at least, "in order to explore it more." In this exquisite circularity of motive, the farmer and the normal mathematician are well within their rights. They are within their rights just as a musician would be

within his rights if he chanced to be so exclusively interested in the work of composition as never to be concerned with having his creations rendered before the public and never to attempt a philosophic estimate of the human worth of music. The distinction involved is not the distinction between human and inhuman, between social and anti-social; it is the distinction between what is human *or* inhuman, social or anti-social, and what is neither the one nor the other. No one, I believe, may contest the normal mathematician's right as a mathematical student or investigator to be quite indifferent as to the social value or the human worth of his activity. Such activity is to be prized just as we prize any other natural agency or force that, however undesignedly, yet contributes, sooner or later, directly or indirectly, to the weal of mankind. The fact is that, among motives in research, scientific curiosity, which is neither moral nor immoral, is far more common and far more potent than charity or philanthropy or benevolence. But when the mathematician passes from the rôle of student or investigator to the rôle of teacher, that right of indifference ceases, for he has past to an office whose functions are social and whose obligations are human. He has not the right to chill and depress with the encasing fogs of the iceberg. It is his privilege and his duty, in so far as he may, to disclose its "million-lustred" splendors in all their power to quicken and illuminate, to charm and edify, the whole mind.

The conception of mathematics as the science of the forms of thought as forms, the conception of it as the refinement, prolongation and elaboration of pure logic, is, as you are doubtless aware, one of the great outcomes, perhaps I should say, it is the culminating philosophical outcome of a century's effort to ascertain what mathematics, in its intimate structure, is. This conception of what mathematics is comes to its fullest expression and best defense, as you doubtless know, in such works as Schroeder's *Algebra der Logik*, Whitehead's *Universal algebra*, Russell's *Principles of mathematics*, Peano's *Formulario mathematico*, and

especially in Whitehead and Russell's monumental *Principia mathematica.* I cite this literature because it tells us what, in a definitional sense, the science in which the normal mathematician is exclusively engaged, is. If we wish to be told what that science humanly signifies, we must look elsewhere; we must look to a mathematician like Plato, for example, or to a philospoher like Poincaré, but especially must we look to our own faculty for discerning those fine connective things—community of aim, interformal analogies, structural similitudes—that bind all the great forms of human activity and aspiration—natural science, theology, philosophy, jurisprudence, religion, art and mathematics—into one grand enterprise of the human spirit.

In the Autumn of 1905 there was published in *Poet lore* a short poem which, tho it says nothing explicitly of mathematics, yet admits of an interpretation throwing much light upon the human significance of the science and indicating well, I think, the normal mathematician's place in the world of spiritual interests. The author of the poem is my excellent friend and teacher, Professor William Benjamin Smith, mathematician, philosopher, poet, and theologian. I have not asked his permission to interpret the poem as I shall invite you to interpret it. What its original motive was I am not informed—it may have been the exceeding beauty of the ideas exprest in it or the harmonious mingling of their light with the melody of their song. The title of the poem is The Merman and the Seraph. As you listen to the reading of it, I shall ask you to regard the merman as representing the normal mathematician and the seraph as representing, let us say, the life of the emotions in their higher reaches and their finer susceptibilities.

I

Deep the sunless seas amid,
Far from Man, from Angel hid,
Where the soundless tides are rolled
Over Ocean's treasure-hold,
With dragon eye and heart of stone,
The ancient Merman mused alone.

II

And aye his arrowed Thought he wings
Straight at the inmost core of things—
As mirrored in his Magic glass
The lightning-footed Ages pass,—
And knows nor joy nor Earth's distress,
But broods on Everlastingness.
"Thoughts that love not, thoughts that hate not,
Thoughts that Age and Change await not,
    All unfeeling,
    All revealing,
    Scorning height's and depth's concealing,
These be mine—and these alone!"—
Saith the Merman's heart of stone.

III

Flashed a radiance far and nigh
As from the vertex of the sky,—
Lo! a Maiden beauty-bright
And mantled with mysterious might
Of every power, below, above,
That weaves resistless spell of Love.

IV

Through the weltering waters cold
Shot the sheen of silken gold;
Quick the frozen Heart below
Kindled in the amber glow;
Trembling Heavenward Nekkan yearned
Rose to where the Glory burned.
"Deeper, bluer than the skies are,
Dreaming meres of morn thine eyes are
    All that brightens
    Smile or heightens
Charm is thine, all life enlightens,
Thou art all the soul's desire."—
Sang the Merman's Heart of Fire.
"Woe thee, Nekkan! Ne'er was given
Thee to walk the ways of Heaven;
    Vain the vision,
    Fate's derision,
Thee that raps to realms elysian,
Fathomless profounds are thine"—
Quired the answering voice divine.

V

Came an echo from the West,
Pierced the deep celestial breast;
Summoned, far the Seraph fled,

Trailing splendors overhead;
Broad beneath her flying feet,
Laughed the silvered ocean-street.

VI

On the Merman's mortal sight
Instant fell the pall of Night;
Sunk to the sea's profoundest floor
He dreams the vanished Vision o'er,
Hears anew the starry chime,
Ponders aye Eternal Time.
"Thoughts that hope not, thoughts that fear not,
Thoughts that Man and Demon veer not
    Times unending
    Comprehending,
Space and worlds of worlds transcending,
These are mine—but these alone!"—
Sighs the Merman's heart of stone.

I have said that the poem, if it receive the interpretation that I have invited you to give it, throws much light on the human significance of mathematics and indicates well the place of the normal mathematician in the world of spiritual interests. No doubt the place of the merman and the place of the angel are not the same: no doubt the world of whatsoever in thought is passionless, infinite and everlasting, and the world of whatsoever in feeling is high and beauteous and good are distinct worlds, and they are sundered wide in the poem. But, tho in the poem they are held widely apart, in the poet they are united. For the song is not the merman's song nor are its words the words of the seraph. It is the voice of the poet—a voice of man. The merman's world and the world of the seraph are not the same, they are very distinct: in conception they are sundered; they may be sundered in life, but in life it need not be so. The merman indeed is confined to the one world and the seraph to the other, but man, a man unless he be a merman, may inhabit them both. For the angel's denial, the derision of fate, is not spoken of man, it is spoken of the merman; and the merman's sigh is not his own, it is a human sigh—so lonely seems the merman in the depths of his abode.

No, the world of interests of the human spirit is not the merman's world alone nor the seraph's alone. It is not

so simple. It is rather a cluster of worlds, of worlds that differ among themselves as differ the lights, by which they are characterized. As differ the lights. The human spirit is susceptible of a variety of lights and it lives at once in a corresponding variety of worlds. There is perception's light, commonly identified with solar radiance or with the radiance of sound for music, too, is, to the spirit, a kind of illumination: perceptional light, in which we behold the colors, forms, and harmonies of external nature: a beautiful revelation—a world in which any one might be willing to spend the remainder of his days if he were but permitted to live so long. And there is imagination's light, disclosing a new world filled with wondrous things, things that may or may not resemble the things revealed in perception's light but are never identical with them: light that is not superficial nor constrained to paths that are straight but reveals the interiors of what it illuminates and phases that look away. Again, there is the light of thought, of reason, of logic, the light of analysis, far dimmer than perception's light, dimmer, too, than that of imagination, but far more penetrating and far more ubiquitous than either of them, disclosing things that curiously match the things that they disclose and countless things besides, namely, the world of ideas and the relations that bind them: a cosmic world, in the center whereof is the home of the merman. There remains to be named a fourth kind of light. I mean the light of emotion, the radiance and glory of things that, save by gleams and intimations, are not revealed in perception or in imagination or in thought: the light of the seraph's world, the world of the good, the true and the beautiful, of the spirit of art, of aspiration and of religion.

Such, in brief, is the cluster of worlds wherin dwell the spiritual interests of the human beings to whom it is our mission to teach mathematics. My thesis is that it is our privilege to show, in the way of our teaching it, that its human significance is not confined to one of the worlds but, like a subtle and ubiquitous ether, penetrates them all.

Objectively viewed, conceptually taken, these worlds, unlike the spheres of the geometrician, do not intersect—a thing in one of them is not in another; but the things in one of them and the things in another may own a fine resemblance serving for mutual recall and illustration, effecting transfer of attention—transformation, as the mathematicians call it—from world to world; for whilst these worlds of interest, objectively viewed, have naught in common, yet subjectively they are united, united as differing mansions of the house of the human spirit. A relation for example, between three independent variables, exists only in the grey light of thought, only in the world of the merman; the habitation of the geometric locus of the relation is the world of imagination; if a model of the locus be made or a drawing of it, this will be a thing in the world of perception; finally, the wondrous correlation of the three things, or the spiritual qualities of them—the sensuous beauty of the model or the drawing, the unfailing validity of the given relation holding as it does thruout "the cycle of the eternal year," the immobile presence of the locus or image poised there in eternal calm like a figure of justice—these may serve, in contemplating them, to evoke the radiance of the seraph's world: and thus the circuit and interplay, ranging thru the world of imagination and the world of thought from what is sensuous to what is supernal is complete. It would not have seemed to Plato, as it may seem to us, a far cry from the prayer of a poet to the theorem of Pythagoras, for example, or to that of Archimedes respecting a sphere and its circumscribing cylinder. Yet I venture to say, that calm reflection upon the existence and nature of such a theorem—cloistral contemplation, I mean, of the fact that it is really true, contemplation of its serene beauty, of its silent omnipresence thruout the infinite universe of space, of the absolute exactitude and invariance of its truth from everlasting to everlasting—will not fail to yield a sense of reverence and awe akin to the feeling that, for example, pervades this choral prayer by Sophocles:

"Oh! that my lot may lead me in the path of holy innocence of word and deed, the path which august laws ordain, laws that in the highest empyrean had their birth, of which Heaven is the father alone, nor did the race of mortal men beget them, nor shall oblivion put them to sleep. The god is mighty in them and he groweth not old."

But why should we think it strange that interests, tho they seem to cluster about opposite poles, are yet united by a common mood? Of the great world of human interests, mathematics is indeed but a part; but it is a central part, and, in a profound and precious sense, it is "the eternal type of the wondrous whole." For poetry and painting, sculpture and music,—art in all its forms—, philosophy, theology, religion, and science, too, however passional their life and however tinged or deeply stained by local or temporal circumstance, yet have this in common: they all of them aim at values which transcend the accidents and limitations of every time and place; and so it is that the passionlessness of the merman's thought, the infiniteness of the kind of being he contemplates and the everlastingness of his achievements enter as essential qualities into the ideals that make the glory of the seraph's world. I do not forget, in saying this, that, of all theory, mathematical theory is the most abstract. I do not forget that mathematics therefore lends especial sharpness to the contrast in the Mephistophelian warning:

> "Grey, my dear friend, is all theory,
> Green the golden tree of life."

Yet I know that one who loves not the grey of a naked woodland has much to learn of the esthetic resources of our northern clime. A mathematical doctrine, taken in its purity, is indeed grey. Yet such a doctrine, a world-filling theory woven of grey relationships finer than gossamer but stronger than cables of steel, leaves upon an intersecting plane a tracery surpassing in fineness and beauty the exquisite artistry of frost-work upon a window pane. Architecture, it has been said, is frozen music. Be it so. Geometry is frozen architecture.

No, the belief that mathematics, because it is abstract, because it is static and cold and grey, is detached from life, is a mistaken belief. Mathematics, even in its purest and most abstract estate, is not detached from life. It is just the ideal handling of the problems of life, as sculpture may idealize a human figure or as poetry or painting may idealize a figure or a scene. Mathematics is precisely the ideal handling of the problems of life, and the central ideas of the science, the great concepts about which its stately doctrines have been built up, are precisely the chief ideas with which life must always deal and which, as it tumbles and rolls about them thru time and space, give it its interests and problems, and its order and rationality. That such is the case a few indications will suffice to show. The mathematical concepts of constant and variable are represented familiarly in life by the notions of fixedness and change. The concept of equation or that of an equational system, imposing restriction upon variability, is matched in life by the concept of natural and spiritual law, giving order to what were else chaotic change and providing partial freedom in lieu of none at all. What is known in mathematics under the name of limit is everywhere present in life in the guise of some ideal, some excellence high-dwelling among the rocks, an "ever flying perfect" as Emerson calls it, unto which we may approximate nearer and nearer but which we can never quite attain, save in aspiration. The supreme concept of functionality finds its correlate in life in the all-pervasive sense of interdependence and mutal determination among the elements of the world. What is known in mathematics as transformation—that is, lawful transfer of attention, serving to match in orderly fashion the things of one system with those of another—is conceived in life as a process of transmutation by which, in the flux of the world, the content of the present has come out of the past and in its turn, in ceasing to be, gives birth to its successor, as the boy is father to the man and as things, in general, become what they are not. The mathematical concept of in-

variance and that of infinitude, especially the imposing doctrines that explain their meanings and bear their names—what are they but mathematicizations of that which has ever been the chief of life's hopes and dreams, of that which has ever been the object of its deepest passion and of its dominant enterprise, I mean the finding of worth that abides, the finding of permanence in the midst of change, and the discovery of the presence, in what has seemed to be a finite world, of being that is infinite? It is needless further to multiply examples of a correlation that is so abounding and complete as indeed to suggest a doubt whether it be juster to view mathematics as the abstract idealization of life than to regard life as the concrete realization of mathematics.

Finally, I wish to emphasize the fact that the great concepts out of which the so-called higher mathematical branches have grown—the concepts of variable and constant, of function, class and relation, of transformation, invariance, and group, of finite and infinite, of discreetness, limit, and continuity—I wish, in closing, to emphasize the fact these great ideas of the higher mathematics, besides penetrating life, as we have seen, in all its complexity and all its dimensions, are omnipresent, from the very beginning, in the *elements* of mathematics as well. The notion of group, for example, finds easy and beautiful illustration, not only among the simpler geometric motions and configurations, but even in the ensemble of the very integers with which we count. The like is true of the distinction of finite and infinite, and of the ideas of transformation, of invariant, and nearly all the rest. Why should the presentation of them have to await the uncertain advent of graduate years of study? For life already abounds, and the great ideas that give it its interests, order and rationality, that is to say, the focal concepts of the higher mathematics, are everywhere present in the elements of the science as glistening bassets of gold. It is our privilege, in teaching the elements, to avail ourselves of the higher conceptions that are present in them; it is our privilege

to have and to give a lively sense of their presence, their human significance, their beauty and their light. I do not advocate the formal presentation in secondary schools, of the higher conceptions, in the way of printed texts, for the printed text is apt to be arid and the letter killeth. What I wish to recommend is the presentation of them, as opportunity may serve, in Greek fashion, by means of dialectic, face to face, voice answering to voice, all animated with the varying moods and motions and accents of life—laughter, if you will, and the lightning of wit to cheer and speed the slower currents of sober thought. Of dialectic excellence, Plato at his best, as in Phaedo or the Republic, gives us the ideal model and eternal type. But Plato's ways are frequently circuitous, wearisome and long. They are ill suited to the manners of a direct and undeliberate age; and we must find, each for himself, a shorter course. Somebody imbued with the spirit of the matter, possest of ample knowledge and having, besides, the requisite skill and verve ought to write a book showing, in so far as the printed page can be made to show, how naturally and swiftly and with what a delightful sense of emancipation and power thought may pass by dialectic paths from the traditional elements of mathematics both to its larger concepts and to a vision of their bearings on the higher interests of life. I need not say that such a handling of ideas implies much more than a verbal knowledge of their definitions. It implies familiarity with the doctrines that unfold the meanings of the ideas defined. It is evident that, in respect of this matter, the scripture must read: Knowing the doctrine is essential to living the life.

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V

OXFORD—A CONTRAST

In these days of educational questionings, it may be of interest, and, perhaps, of value to consider briefly the system of Oxford, both in its actual expression and in its implications. Some of the smaller colleges in this country, such as Amherst and Hamilton, are debating the question as to what type of institution they wish to belong. Within a short time Yale has adopted a system of major and minor subjects and a few years ago Princeton changed to the "tutorial system," which is very similar to that at Oxford, to say the least. Thus there seems to be some dissatisfaction with our old methods and this, I think, is but natural when so many of our students and educators become well acquainted with the systems of Europe. Any thinking man who puts himself into close and unprejudiced observation of the higher education in England, France and Germany must be conscious of certain defects in the results of our own methods—tho at the same time he will be proud of our advantages. An increasing number of American students is finding its way to Oxford and most of them are deeply imprest with the English education which they find there.

First of all, if we take a glance at the more external side of the University, we find twenty-two different colleges in separate buildings, scattered around the quaint, old city. Each college is a complete unit in itself, having its own dormitories, eating hall, library, chapel, lecture and social rooms, clubs and athletic organisations. Likewise each college has a head who goes by the title of master, warden, dean, president, or rector, and a various number of tutors and fellows who do the teaching and lecturing, and manage the college. The University of Oxford consists of these

different colleges united and organised for their common welfare. Its head is the chancellor, generally an English peer and at present Lord Curzon; but the chancellor, on account of his political and other duties, is seldom at Oxford save for some ceremonial occasion, like Commemoration in June, and the actual government of the University is turned over to the vice-chancellor, who is chosen from among the heads of colleges. There are also two governing houses, convocation and congregation, with whom the final decision as to the policies of the University lies, and an executive committee called the Hebdomadal Council.

These university authorities have established certain courses of study upon completion of which they admit students to examinations for degrees. The University holds examinations and grants degrees but the student is prepared by his college which can neither hold degree-examinations nor grant degrees. Hence the two years or more of work done in Oxford are under one set of authorities, viz., those of the college, and the final examination and degree-granting are under another set, viz., those of the University. Some of the far-reaching effects of this arrangement are obvious at once, and will be considered later.

The principal courses or "schools," as they are termed in Oxford, are the following: Literae Humaniores, which includes philosophy (chiefly Greek) and Greek and Roman history; Modern History; Jurisprudence; Theology; Natural Science; Mathematics; Modern Languages; English Literature; Oriental Studies. For each of these schools, the University gives an examination every year in June and to the successful candidates it grants the degree of B.A. On the other hand, every college maintains (either by itself or in conjunction with other colleges) a tutor or tutors for each of these schools, and it is to them that the actual preparation of the student is intrusted. When a student begins reading for the History School, for example, he goes to his college tutor in history, who assigns him certain lectures and individual work for the term, and personally supervises his study until he takes the final examinations.

Thus, a college, as far as its personnel goes, comprizes a head, various tutors and fellows for all the courses of study, and a number of students taking any of these courses. Each college thus prepares for all the courses.

But while the actual supervision of the student's preparation is left to the college authorities, the University does not neglect to help him, for it maintains a number of lectures in all the schools which are open to any student who wishes to come to them. The lectures are given by tutors who are known to be proficient in their subject and by the professors. Now the professors are not college officers but are appointed by the University and are generally mature men who have reached a high standard of excellence in their particular work. Hence, thru the lectures of such scholars the students come into touch with the latest and highest attainments in their line. Many of the lectures are on specially difficult and intricate departments of the school, and involve a high degree of modern "specialism." Attendance on these lectures and on others more general in scope is part of the daily work of the student.

While in America lectures and recitations form by far the largest proportion of the work done in all but the scientific courses where laboratory investigation is necessary, in Oxford they are but a small and often insignificant part of the total preparation. which may be considered under three classes. First, there is the weekly work which a student does for his tutor and which usually consists in writing one or sometimes two fair-sized essays on subjects assigned. Such compositions are not superficial generalisations which can be skimmed hurriedly from the *Encyclopedia Britannica* nor mélanges of undigested facts put together without any process of assimilation. The writer well remembers his chagrin at watching his philosophy tutor ruthlessly pull to pieces his first essay, which presented a beautiful appearance but which had been drawn from a distinctly encyclopedic source. It was quite a good American college composition but the Oxford don was much disgusted that no knowledge of the original sources had been shown. Essays such as

these are usually taken to the tutor by the student alone at some appointed time, and are discust and criticized for an hour while the author has to defend the point of view which he has adopted.

A second part of the student's work is attendance upon the lectures which I have already described. Finally, there is a great amount of material which is left entirely to the undergraduate to master, such as the reading of texts and the working up of subjects for which there is no time in the tutorial hours. Usually the college tutors hold quizzes two or three times in the year which cover the subjects so prepared and those treated of in the essays. But it should be remarked here and borne in mind as a characteristic true of almost all of the work done in Oxford that it does not consist in getting up certain books and lecture-courses as so often in this country, but in the mastery of subjects. This holds of most of the essays, which can rarely be written from one book, and of the examinations. Hence, if the student reads books or writes essays or hears lectures, it is all for the ultimate purpose of getting thoroly acquainted with a certain branch of knowledge, and often this is done in entirely distinct ways by different individuals.

In these three ways, then, the Oxford undergraduate tries to prepare himself for the examination in his school. The examination is considered as the culmination of his course and is meant to test his proficiency in the work he has done. This division of the whole range of studies taught in the University into separate schools to one of which every student limits himself is a characteristic feature of the Oxford system and marks a wide distinction between that system and the one generally adopted in the United States. To apply physical terms to educational tendencies we might say that, speaking generally, the aim of Oxonian education is depth, whereas American education strives for breadth; and probably the first criticism that a devotee of our methods would lodge against the curriculum of the English university would be that its courses were narrowing. In order to appreciate the justice or injustice of such an objec-

tion, we must consider briefly the outlines of an Oxford school. The Modern History School has at present more followers than any of the others and we can take that as an example. Its requirements may be grouped thus:

(1) The history of England, including constitutional history and continuous political history down to 1837.

(2) A selected period of general European history, with attention to society and literature.

(3) Political science and political economy with economic history.

(4) Constitutional law and political and descriptive geography.

(5) Unprepared translation from French, German, or Italian (to test the ability to use original sources for European history).

(6) A special subject must be selected in addition to the above by all those who aim at a first or second class in the examination.

A glance at this résumé shows clearly that the History School is not by any means narrow, and it is fairly typical of the others. In our colleges, each one of the subdivisions (except perhaps No. 5) would be made a separate course, and so an Oxford undergraduate in the History School really takes the equivalent of four or five American courses. But it will be objected that the peculiar 'narrowness' of such a school is not in the number of different courses which it prescribes but in its limitation to one line of work, viz., in this case, modern history. Yet if we look again at the list above, the subjects while closely related seem to cover a fairly wide field. They include, in American terminology, courses in English history, European history, political science and economics, constitutional law, and a modern language, each of which would probably be taught here by separate departments and without any correlation. But they are all cognate subjects and bear on one another; in getting up these five subjects, the student is really getting up one broad subject. Here we see what I believe is a point of superiority in this English system—grouping related sub-

jects into broad courses to one of which a student confines his attention for two years or more. He thus gets to know well one department of knowledge by studying its various aspects or parts as the case may be; in other words, if we go back to the physical analogy, he gets the necessary depth and a fair degree of breadth—as much as is possible in the nature of the case.

It would seem that a proper undergraduate education depends on the correct proportion between the depth and the breadth of the work it entails. As far as depth goes, the rules should be those of thoroness and of accuracy, the former concerning the matter under consideration and the latter the method of working with it. To investigate a subject thoroly, it is necessary to consider the whole field in its parts and in its entirety, and that not by reading second-hand descriptions but by going to the original authorities. Accuracy is the precise mastery of the details with the subsequent assimilation and correlation of them into one whole such that both the parts and the totality are held in true perspective. As accuracy is a virtue gained only with long practise, it rests to a great degree with the teacher to cultivate it in his pupil; and this he can do by judicious criticism of essays and recitations and quizzes. But all this must be sacrificed if too much breadth is insisted upon. Breadth is certainly a desirable element in an education but if it is pursued to the detriment of depth, the result is superficiality, which is surely a more lamentable shortcoming in a college education than what has been termed, for want of a better word, narrowness. Both depth and breadth must be present but in the right proportion. It is surely better to do something well and thoroly, than to do many things in a mediocre way; hence, depth should be insisted on in education and as much breadth should be acquired as is consistent.

It would be idle to assert that the Oxford system is perfect and I think it is far from being so, but I believe that it gives greater opportunities for depth in college education than the methods usual here. By limiting the student's

activity to one broad field it permits of a much higher degree of mastery than is possible when he takes several unrelated courses. Of course, a great deal of the credit rests with the tutors and examiners who demand acquaintance with the original authorities and accuracy in using them; and if they assign a subject for investigation, it is not enough to read a book on it or hear a course of lectures, but the subject itself must be got up. But the question is: is all this possible in a system of separate and often short courses like that so frequently found in our colleges? Whether possible or not, it certainly does not seem to be actual if we accept the testimony of the Oxford tutors in regard to the American Rhodes scholars and the criticism of many American business men.

In the Fifth Annual Report of the President and of the Treasurer of the Carnegie Foundation for the Advancement of Teaching there are quotations given from reports made to the officers of the Rhodes Trust by Oxford tutors concerning the scholastic ability of the Rhodes scholars, and in almost every case we read of superficiality and diffuseness in previous training. They are "volatile and never educated 'gründlich'." "Their early training makes them in some cases superficial and inaccurate." "Their American course is wider than ours but not so thorough at any point." "They do not appear to study a subject as a whole, as we do, but, after attending courses of lectures on a portion of a subject, they appear to drop that and never revise it again." "They have preferred to study too many subjects, of most of which they have acquired the merest smattering." And President Pritchett sums up the evidence justly thus: "These shrewd criticisms not only bring out in clear relief the student's lack of precision and his weakness before a hard intellectual task, but they point back unerringly to the causes of this failure in the lack of sound teaching and in the diffuse curriculum, with its numerous and partial examinations which never call upon the student to view the field as a whole." If thoroness and accuracy are the marks of a "deep" education, it is patent that ours lacks depth; and

the efficient cause seems to lie in the diffuseness of the curriculum.

A great deal has been written and more said during the last ten or fifteen years as to the usefulness of a college education for life in general and for professions in particular, and no doubt both the protagonists and the antagonists have put forward much that is just in favor of their contentions. But thruout it all, there has been the disturbing fact of the hostile criticism of many business men who have asserted that college unfits young men for business because they are unable to carry thru any long, hard task; in other words, they are lacking in thoroness and in the capacity for hard work. Conceding that some of this criticism may have arisen from prejudice, we yet can not minimize the relevancy and justice of the indictment as a whole. If college men go into business lacking thoroness in their methods, it is because they come out of college so, and the only sufficient reason for it in college is the curriculum. It is because men are allowed to take four or five unrelated courses for a year or part of a year with no opportunity to get up one of them really well and no possibility of forming them all into one whole which would represent a branch of knowledge. It is impossible to know the sources and authorities for any one of the courses because there isn't time; if a man wants to know Plato or Aristotle, he reads what some one wrote about them, but in Oxford an undergraduate with the same purpose—for instance in the School of Literae Humaniores—must perforce read the *Republic* and the *Nichomachean ethics* or their equivalents. Likewise if the young Englishman is studying Roman law for the School of Jurisprudence, he reads the Institutes of Gaius, the Institutes of Justinian, and, if he aims at a first class, some of the Digest. Obviously such things are impossible with the constraints of an American course, and equally as obviously they make for thoroness. That thoroness too which can be inculcated in college is of the same kin as that which is necessary for business efficiency and which, employers affirm, is lacking in graduates.

We have it then from good authorities that there is a strain of weakness in our collegiate education, and we can trace the mischief back to the shallowness and diffuseness of the courses. Now there are three possible ways to remedy the evil: the professors in charge of every course can load on more work, or the college authorities can limit the student to one or two courses, or they can group cognate subjects into broad courses and thus limit the range of electives. I suppose in many cases it would be possible for the departments to require more work, but a little reflection will show that this would really be no remedy at all, for the evil is lack of thoroness and accuracy and an undergraduate is incapable of being thoro and accurate in four or five different subjects, even if each of them is reduced to absurdly narrow limits. Secondly, the curriculum might be arranged so that the student could take, let us say, two fairly wide subjects, perhaps like a major and minor. Some such system as this has been adopted at Yale for next year; it has been reported as follows: "In junior and senior year each student will be required to complete a major course in one subject and a minor course in a related subject, aggregating together not less than twelve nor more than fifteen hours out of the thirty hours of study for the two years." Here the related subjects are only half of the work that the student does, but it appears like a step in the right direction. Supposing, however, that all the work were grouped under two more or less related subjects, it would clearly be possible to insist on much greater proficiency than in the other method, and a good amount of breadth would be preserved. The third remedy would be the adoption of a scheme like that at Oxford where all the studies are subdivisions of one broad yet limited field. No sensible person could advocate taking an impression of the English system, as it were, and superimposing it bodily on our educational conditions; and that is as far as possible from my desire. But I firmly believe that the need of our college education lies in the direction of the second or third scheme which I have suggested.

At present the greater proportion of benefit to be derived from four years of study at a college is material to aid in a subsequent career, because so little can be got from the methods of study. And as so great importance is attached to the material, we try to get as much as possible. So following this idea, we have come to take many different courses. But when we appreciate the necessity for more attention to method and have realized a true thoroness and preciseness, then it will be possible for our college education to fill its cornucopia with much greater gifts—gifts which will be recognized by all the business men. Moreover it will not be a narrow education—it is not now broad but only scattered—for if you go not even a very long way in one subject, you are bound to get into others. The demarcations of the arts and sciences are more or less arbitrary, and that is true to a much greater degree with the subjects and courses in a college curriculum. If we make the "flower in the crannied wall" a scion of the tree of knowledge, we can appropriately say:

> "but if I could understand
> What you are, root and all, and all in all,
> I should know what God and man is."

How easily one large field falls into subdivisions, which are often found absolutely sundered in our college catalogs, is seen in the analysis of the School of Modern History at Oxford into constitutional, political, social, literary, economic, and, if you please, geographic. These are many subjects but they all belong to one large subject and in their teaching are made to bear upon it. The beauty of the scheme is twofold: you know one subject comparatively well and can take that with you bodily if you wish, and you have a priceless training in method good not only for any career but for life.

If now there is the fault in our education that I have tried to show, and if advance lies along the line of one of the two remedies indicated, the question then arises as to which of these will best suit our conditions in the United States. That is a question which I can not hope to answer, but it is

possible to point out some important differences in the situations of England and of this country which will result necessarily in differing systems of education. In the first place, the social conditions are radically dissimilar. The English boys that come from the public schools to Oxford (and to Cambridge) are generally from well-to-do and cultured families, and have had many opportunities which are not ordinarily within the reach of our school boys. The Continent is near and can be seen with little expense, so that great numbers of young Englishmen either while in school or in college travel in the countries of Western Europe and learn one or two foreign languages. They may not know them well but probably are as well acquainted with them as many of the boys who take our ordinary college courses in them. Thus they can get this outside of the regular college work, while in America in most cases they can not—except perhaps a smattering in high school. If it is desirable that our young men know one or more foreign tongues, as most people will agree it is, it is necessary to look to the colleges in great measure to teach them and this will have to be kept as one of the elements of a curriculum. It is much the same also with English literature. Boys are taught at home in England to read and to appreciate the masterpieces of the language with which they keep a fresh and lively acquaintance during their school days. It has only been during the last fifteen years that there has been a School of English Language and Literature at Oxford, because it was thought that every educated Englishman ought to know his own language without having to study it at an institution of learning. It is even now a very small school and some students have told me that they considered it a disgrace to have English courses actually taught at the University. On the other hand, American boys often do not have the leisure or the incentive at home to learn English literature, and the teaching in the schools is often unappreciatively and slatternly given. Indeed, college education does not seem to take some of the Rhodes scholars very far, for one tutor writes that they have "little or no

literary sense and very limited command over expression. In the composition of an English essay they have, as a rule, almost everything to learn." But nevertheless we must look to our colleges as the only places where our young men can learn English, if they are to learn it at all, and hence it must be generally kept as a desirable element in the college curriculum. These are only two out of many social variations which will make a necessary difference in the college systems of the two countries. For if it is desirable to keep the student working at a foreign language and English literature in college, he obviously will not be able to devote himself to one broad field of study according to the Oxford system.

Moreover there are strictly educational differences arising out of the relation of high schools and colleges in the English and American systems. In England the public schools and the better grammar schools only have to articulate with the universities, whereas in the United States the secondary schools have both colleges and universities to look to and the result is a lack of coördination. This causes a confusion in the secondary education and a greater burden is laid upon the colleges. For if the high school is made a "cramming place for the college" and college entrance examinations differ so widely as they do, many boys will be and are badly prepared, so that the college has not the proper material to start with. Such young men are mentally unable to take up a large subject and go into it deeply without a considerable amount of training, which they must ask the college for. But it would seem to be possible to give that preparation in freshman and sophomore years, so that the last two years could be devoted to a more thoro investigation of some chosen field. The English boy is not so dependent upon his University for this training for he is usually drilled comparatively well by his public school masters. It is probable, therefore, that we shall have to keep the first years of college for drill-work which will prepare students to take up detailed and precise investigations as juniors and seniors.

I have tried to indicate the more important social and educational conditions which make it likely that it would not be desirable to model our college system on that of the English universities too closely, even if that were our intention. But it might prove feasible to leave freshman and sophomore work much as it is, except that it should be less distributed and more thoro than at present; and to ask the junior to select some fairly extensive subject for a two years' investigation which will occupy the major part of his time but leave a certain amount for subjects such as English or French or a science which it is desirable that he study at that period.

If it has been of any advantage to consider the Oxford curriculum, the examination system may also have some useful suggestions for us. I believe it has at least two. The first one comes from a characteristic which is the logical result of the schools system; if an Oxford school gives an opportunity for the thoro and accurate handling of a broad subject, the examination demands it. A man usually works two years and a third (the Oxford year is divided into thirds) on his final honor school and the examination at the end of that period covers all the subjects he has studied. The papers set number from ten to thirteen and each usually needs three hours tho in some cases only two. Thus the kind of study made possible by the curriculum is made necessary by the examination. It needs little comparison to perceive the enormous difference between this way of testing a man's knowledge and that found in our colleges. Here it is the rule to have an examination at the end of every term or at most of every year, and the next semester new work is begun which will be covered by a future examination. The student acquires knowledge piecemeal; it is thrown to him like bits of meat to a caged lion, and after he has one down successfully he is ready for another. He has no obligation or opportunity to survey the field as a whole, even where that is possible. If a man takes a course in American history for two years, he is examined on parts of it but not on all that he has gone over in the whole course—

in periods, not in American history. The very limited nature of such examinations also tends to make it impossible to work up a subject thoroly and often a certain book or a course of lectures is the only assignment.

Now I hold no brief for the final examination as the only basis for the granting of degrees, and I know that the system has given some dissatisfaction at Oxford. Mr. R. C. Maclaurin writing in the *North American review* for March, 1911, says that "there can be little doubt that an undue importance is still attached to examinations in Oxford and almost everywhere else in the educational fields of England," and this fact is becoming more and more recognized. But do we not go to the other extreme and make our examinations either farcical or practically useless? Or at any rate, would it not be possible to give and to get a great deal more good from an examination on a subject thoroly investigated during junior and senior years than from the little quizzes and terminal tests now in vogue? It is worth while here again to refer to the testimony of an Oxford tutor in regard to the Americans in his college. He says: "As a general rule, they know nothing well, but know something about a great many things—the kind of knowledge you might get from attending public lectures. Moreover, apparently even in scientific studies they have not been accustomed to keep their hold on work for any great length of time. The examinations appear to be in work which has not been done very long before the date of the examination intended to test it. As a consequence, they at first find the Oxford system difficult, for the double reason that they are expected to get up a subject thoroly, and are tested by an examination much longer and more severe than that to which they have been accustomed and on an extensive range of work, some of which has necessarily been done a considerable time before the examination takes place." This, I think, shows the weakness of our examination system and suggests some profitable improvements. An examination as a mere test of the professor to see how much the student knows is to some degree ineffectual because of the element of chance it

involves; but it can be made of real benefit to the student by making him look all over the field at once. He must coördinate and subordinate facts learned two years ago and two weeks ago, which he probably will not do without some definite opportunity. A final examination—as distinct from the terminal ones—gives this opportunity and I think that it ought to be a desideratum for our college system. With due appreciation of the many and serious difficulties in the way, it is my opinion that it would be possible now to have a final examination in many courses which cover a year or more, and that, if any such scheme for the curriculum as has been outlined before is adopted, it would be a practical necessity.

The second suggestion which the Oxford examination system has to offer is not nearly so practical for our conditions as the first. In the English University for the School of Literae Humaniores, which we may take as an example, twelve papers are set, for which the college tutors are supposed to prepare their students. But the tutors as such do not conduct the examination; for that purpose five examiners are appointed by the University, with "assessors" or helpers upon occasion. Hence a student is not examined by the man who has been responsible for the teaching, tho his tutor may be one of the examiners and he may have heard lectures by all the others. In this sense it is true to say that a man is not examined by his teacher. Such a system is only possible where students are required to get up subjects, and this fact puts a premium on knowing a subject thoroly. Of course, the subject, tho broad, is pretty well delineated and the examination covers a more or less strictly defined field. But nevertheless, the student knows that what he gets from one teacher is not enough to pass him; he must "get" the subject, and to do this he has to rely to a great extent upon his own conscientious work. Here in our limited subjects the material is generally "given" by the professor in lectures or recitations. The English usage requires individual or rather personal investigation, tho not original research. That this is desirable, few will

deny; that it is possible where examiner and teacher are the same, I myself will admit. But I think that this is one of the elements in a system which helps to put the emphasis on thoro personal work and to instil methods of study which will be always useful. Moreover it puts unconscious favoritism and "personal equations" at the minimum, which is something that both professors and students welcome.

Now I recognize that in our smaller institutions where there is one professor to each department, this scheme is impracticable, and I also know that it is already practised in some prize examinations. But it might be found feasible in the larger colleges and the universities. I merely put it forward as a useful suggestion, which I believe highly profitable where possible.

Of the Oxford tutorial system I shall say nothing, both because it is better known in our educational circles than the usages I have described and because something similar to it has been adopted in some of our universities.

In these sketches of the ways of Oxford, much has had to be omitted for the sake of simplification, but I do not believe the account is vitiated thereby. I hope that no one will accuse me of picturing Oxford as conforming to an educational scheme taken from some Ideal Republic, for I know many of its faults by exasperating experiences. Moreover,

> "There are plenty of trees,
> And plenty of ease,
> And plenty of fat deer for Parsons"—

and many other things that Keats might have taken as subjects for parody. Some of these have been mentioned, but most were left out as being unnecessary for the present purpose, which is to show some points of superiority in the Oxford system suggesting problems and solutions to us.

One other possible misconception I must guard against. In my criticisms of our own methods and my praise of Oxford, it may have seemed that I did not sufficiently appreciate our present advantages or future possibilities. But it is precisely because I have the greatest hopes for our education that I have tried to indicate some lines of

progress. It would be more true to say that I do not understand the future impossibilities. We are spending enormous sums of money on our education and giving it some of our best thought; I look forward, as do many people in Europe even, to the time when the American system of education shall be considered the best in the world. But while we are progressing extensively, let us not forget "intensive cultivation."

R. M. Scoon

Princeton, N. J.

VI

NEWSPAPER LIBRARIES

When recently a librarian was asked what sort of library equipment a School of Journalism should have, he was forced to admit, after diligent search, that the question could not be answered from information contained in the literature of his profession or in literature devoted to the press.

"What kind of libraries do newspapers maintain?" was the next question asked. "Surely this subject has received the attention of the modern librarian." But again an admission of ignorance was necessary, because, except for isolated studies of one or two special libraries, little has been written.

It is in consequence of this fact that the writer visited the libraries of the chief newspapers in New York city, and here records his observations.

The library activities of newspaper offices which are of chief interest group themselves under four heads, viz.:

(1) Library organization.
(2) The care and use of clippings.
(3) Bound files of newspapers.
(4) The indexing of newspapers.

I. Library Organization

Newspaper libraries vary greatly in interest and importance. Out of nine prominent offices visited, seven have organized libraries or collections of books known as "the library," and two have no library at all. Of the seven, six are in charge of persons bearing the title librarian; but of these six, only two are in charge of persons with previous library training or experience. In only three cases does the librarian devote himself entirely to the

library. In the other cases, library work is combined with some phase of newspaper work. These facts are sufficient to show that newspaper libraries are practically virgin fields for trained librarians, but they do not indicate that there is nothing to be learned from the libraries as they now exist. Quite the opposite is the case. The fact that there is no coöperation between newspaper libraries, and that each is working out its own destiny responsive only to very patent needs, tends to fix the mind on fundamentals, rather than on forms and technique. But the time has come when these libraries must feel the influence of modern library methods, especially those for which the Special Libraries Association stands sponsor.

There are two points on which newspaper librarians are agreed, viz., the size of the library and its essential character. It is urged by all that a newspaper library must remain small in order to retain the maximum of usefulness. The libraries range in size from about 2,000 to 15,000 volumes, and it is the common opinion that when a library reaches the number of 5,000 volumes, it is time to weed it out. Of course there are many reasons entering into this conclusion, and not the least of these is the difficulty of finding space for a large library; but even more important to busy men is the fact that large collections are apt to become unwieldy. It is true also that a limit to the size of newspaper libraries can not be set intelligently without assuming an excellence in administrative methods which does not now exist.

The proper size of these libraries must be determined, however, chiefly by their necessary character; and it is agreed that they should be reference libraries, pure and simple. This expression is so elastic in use that it has no meaning unless it is defined; and I can give the newspaper man's conception of a library no better than by quoting the words of a busy city editor: "A newspaper library should be divided into two parts," said he; "and these parts should be separately grouped. The solid, reliable books, containing arguments pro and con, from which you can at leisure dig out the facts, should stand by themselves.

But the 'hair trigger' books, which you use when in five minutes you tear the heart out of a subject, and send your copy to the linotype while the presses wait, must be literally within arm's reach. The rest of the library may be a block away, either vertically or horizontally, and still be useful."

Now hair-trigger books, observed in actual use in newspaper offices include many old library friends. They are for the most part books in one volume, which appear yearly, and contain information in its most condensed form. Often they are duplicated several times in the same building, so that they may be in easy reach of several groups of men. The titles of a few books on the shelves nearest one librarian's desk will indicate their character. First, there was a group of newspaper almanacs in English, latest editions, such as those issued by the New York *World*, the *Tribune*, the *Brooklyn Eagle*, the Chicago *Daily News*, and the London *Daily Mail*. Next, there were the nobility lists of the various countries, e. g., the *Taschenbücher*, published at Gotha, the *Almanac de Gotha*, the *Annuaire della Nobilita Italiana*, etc.; then every available *Who's who*, with which were grouped social registers, army and navy lists, clergy lists, medical directories, the *Directory of directors*, the *Congressional directory*, and the *Official register of the United States*. A group of commercial reference books followed, including Moody's and Poor's *Manuals*, Lloyd's *Register of shipping*, and the *American Lloyds*. The remaining space was filled by legislative manuals, reports of governors and other state officials, consular reports and handbooks of foreign countries, such as the *Japan yearbook*, and the *Handbook of Jamaica*.

The earlier files of all these books were preserved and kept on the shelves among the less used books. I gained the impression that even encyclopaedias are not genuine "hair-trigger" books, because they were not shelved where quickest action is necessary. Of course, the selection of these quick-action books varies with different newspapers, and their location depends on the organization of the office. The nobility lists, for instance, are shelved in the foreign

department of one paper which makes a specialty of social news of the foreign capitals. The division of the library into the two classes suggested by the city editor corresponds, I think, to the two chief divisions of newspaper work, viz., the news section and the editorial section, editors being presumed to have time to delve in scholarly works, for the purpose of forming a judicial opinion. The editorial library itself, however, must be free from dead timber. It must be so much alive, in fact, that the editor's view will be directed from the present toward the future rather than to the past. If he needs to delve into the past, the public and university libraries are at his service.

Classification and Catalog

The Dewey classification is the only systematic scheme with which the newspaper libraries visited are familiar. In one instance the call numbers are affixt in library fashion, on both cards and books, and in another the numbers are written in the books, altho there is no catalog, the classification having been made in the busy librarian's odd moments by the aid of the Pittsburgh printed catalog. In all other cases the books are devoid of call numbers, and the grouping is that which seems most natural to the librarian. In three instances there is a dictionary card catalog. In one of these the Library of Congress cards are in use. One library has printed in a little booklet of 46 pages, a rough list, loosely classified, of the most important books, with their location in the building. In every instance the need of a systematic catalog and classification is admitted, but these have thus far been impossible on account of lack of time and technical skill.

Administration

In all but four cases, the administration of the library apparently has been given little or no attention; but the variations in method employed by these four raise a question of policy very important in the development of newspaper libraries. This question is, "Is it possible to allow free access to the shelves, leaving each reader to do his own searching; or must the library proper be shut off from the readers,

who therefore will depend on the librarian—not only to find books for them but to search out the precise bit of information that is desired?" In three cases the open shelf method is employed, while in the fourth, this method has been abandoned, after numerous sad experiences, and the library can now be seen only thru a brass grating, locked and barred. In this instance, however, the "hair-trigger" books are largely duplicated thruout the building. The experiences which led to the adoption of the closed shelf system are worth recording. This particular library is for the use of about 2000 employees, and it now numbers nearly 15,000 volumes—the largest newspaper library in the city. Among the 2000 employees nearly all classes of people are represented, but they all agree in this, so it was said, that the rights of the other fellow in the use of the library are of no consequence. In this respect, newspaper people were compared to college professors, to whom all books are said to be personal property. An interesting commentary on the situation was furnished when the librarian was asked the other day, why the books on religion outnumbered certain other classes. The reply was, "Newspaper people don't borrow religious books for keeps." But there were numerous cases which could not be attributed to love of books, or thoughtlessness, or enthusiasm for the day's work. Not only did books disappear bodily, but they were defaced, articles were clipt, and plates torn out, sometimes to be sold to the editor of the very paper to which the books belonged. Moreover, the library was the ideal loafing place and conversation room, and the romances which began there were without number. So, one day, the business manager rose in his wrath, and ordered a brass cage which he set up to block the doorway of the library. Thru it is a narrow opening like the window of a butler's pantry, or of a ticket-seller's office. If a reporter wishes a book, or any information whatever, he goes to the grating and calls out "library call," whereat in due time the librarian or his assistant appears at the window. There are no electric bells or push buttons, for these would prove too

interesting to the office boys. As he waits, the reporter reads a notice in large letters admonishing him not to abuse his library privileges. Then he is requested to write his needs on a blank at the top of which is printed the following: "Be specific when filling out this blank. No attention will be paid to verbal requests. If you ask for a particular book, say why it is wanted, whether for picture or text. Always clearly state subject you want to write about or illustrate, or facts you want from the Library staff. If the book is wanted, sign the receipt on the other side." On the reverse is printed, "Remember: This is a Reference Library. All books must be returned before you leave the office. If a book is defaced, or not returned, the money to buy a duplicate will be deducted from the borrower's salary."

Since there is no catalog, this method is thoroly irritating to those who wish to use the books, and, as all librarians know, there is a prejudice, inborn and ineradicable, against telling anyone the exact nature of one's inquiry. Therefore, the library and the librarian are not popular, but the business manager is happy. He is confident that his is the only practical way to deal with literary people, and he is supported by his librarian in the prediction that all newspaper libraries eventually will be administered like his own. This library, it should be said, is open 24 hours daily, except from 12 o'clock Saturday night to 2 P.M. Sunday.

II. Clippings

To the librarian, the collection and care of clippings are among his natural functions; but books and clippings do not easily group themselves together in the mind of the average newspaper man. Out of seven newspapers having libraries, only three have located the files of clippings in the library proper. In the other four the files are located either in the news or city room, or in a room adjacent. In one newspaper office, there are two files, one for the editorial department and one for the news department. This separation of sources of information is partly a matter of convenience, but is chiefly due to the face that "morgues,"

as the clipping files are usually called, were ancient and honorable features of newspaper offices long before their libraries were thought of. The name morgue is a misnomer, for it is supposed to be the livest thing in the office except the newspaper men themselves. The name was chosen probably because the clippings were originally exclusively about people the notice of whose death would be important items of news. The place where the morgue is kept is usually called the "dead room," and is the workshop of the "obit" or obituary department. The obituary editor keeps the "obits" of important people written up to date, ready for immediate use, and for people of very great prominence, the obituary is always in type.

The value of biographical clippings has caused most newspapers to extend the scope of their morgues so that they include clippings on all other subjects; but in many cases these are kept in a separate group of envelopes. This second file is sometimes in charge of the 'questions and answers' editor of the paper. In one instance, this editor has systematized his work, by clipping all the questions and answers printed in his paper, pasting them on cards, and filing them in trays like catalog cards.

In only three instances is the morgue of sufficient magnitude to require the entire time of one or more persons; and the qualifications of those in charge vary greatly. In one case it is a college graduate who has been a college instructor in history; in two others it is a newspaper man with long experience qualifying him to know just what items it is important to clip and preserve. The most interesting custodian is a man whose reputation as a scholar is entirely distinct from newspaper work. He is an authority on Polynesian languages, the author of numerous books on philology, and a welcome contributor to the series of monumental monographs published by the Carnegie Institute of Washington. In addition he is general literary adviser to all news-writers on his paper. The "cubs" especially are enjoined to consult him before writing up a story, and they profit by a store of knowledge of life

and of books which gives a distinctive character to the paper. From this ideal custodian, the persons in charge of morgues grade down to boys whose duties are purely mechanical.

Selection of Clippings

The selection of clippings for filing is usually made by the person in charge of the morgue. Each day a mass of papers, magazines, etc., comes into the office. These include numerous copies of the paper which maintains the morgue and at least two copies of all other New York papers. The chief custodian marks the items with blue pencil, indicating by underlining of words, the various headings under which a clipping is to be filed. Sometimes the same clipping, if the requisite number of copies is available, is marked to be filed in a dozen different envelopes. The papers then go to the assistants who clip them, stamp them with the name of the paper, and the date, and place them in the proper envelopes. It is interesting to note that there are several firms which send personal 'write-ups' to the papers, free of charge, the cost of printing and issuing the biographies being paid by the subjects of the biographies.

Arrangement and Care of Clippings

The furniture in which the clippings are filed varies from antiquated wooden drawers to modern wooden or metal filing cabinets and steel shelving constructed to hold a special size of envelopes. There is no uniformity in the size of the manila envelopes, but the favorite approximates about $4^1/_2$ x 8 inches. These either stand on end or lie on their sides, depending on the filing cabinets chosen. Usually the envelopes are arranged alphabetically according to the subjects written or typed upon them. In most morgues, the envelopes were originally arranged by number, and an alphabetical card index was kept. In one instance this method has been retained, on two grounds: first, that without the index an envelope could not be traced if it were lost, and secondly, because the alphabetical arrangement makes it too easy for unauthorized persons to abstract

information from the files. The general opinion is, however, that the numerical arrangement is cumbersome, and that the morgue would become absolutely useless if the index were lost. In one instance, the envelopes formerly were arranged according to the Dewey system with the full equipment of class numbers, but this plan has been abandoned because reporters wishing to use the morgue when the custodian was not present, usually during the busiest hours of the night, found themselves utterly at sea. There is only one instance of actual coöperation between the morgue and the library proper. In this case, there are references on the outside of the envelopes to books on the same subject in the library. Cross references are quite generally used to refer from one envelope to another. This method is employed, however, chiefly because, except in two instances, there is no systematic choice of subject headings. The arrangement serves in most cases not because of system, but because the custodians are intimately acquainted with the contents of the envelopes. Librarians would be much amused at some of the expedients that have been used. For instance, in one morgue, there are at least one hundred envelopes headed Roosevelt. One of the envelopes contains the cross reference "See Liars." Under this heading are ten or fifteen envelopes containing clippings about people whom our erst-while President has elected to membership in the Ananias Club.

In every newspaper office, the value of systematic subject headings is recognized, but only two have had time to prepare them. In one of these cases, the subjects were on cards, and a printed list, since issued, was in preparation. In the other, a pamphlet entitled "Dead Room. Envelopes and Useful Lists," is published at intervals. The last issue is revised to December 1, 1911, and is the 16th edition. "Destroy old copies," is printed at the head of the title page. On the inside cover is an exhortation to be careful in the use of clippings and of the library. The first twenty-four pages contain an alphabetical list of subjects, not biographies, under which envelopes are filed. Then follow

the names of 125 persons whose "obituaries are in readiness," i. e., whose obituaries are in type. Then there are four pages of the names of persons about whom "Character sketches" are on hand. Many of these have already been published. The contents of "pamphlet drawers" are then indicated, and the location in the building of the most useful reference books. Then there are six pages of information about city, state and federal officials whose names are likely to appear in the news. The pamphlet closes with a page of "City Room Don'ts," and an "Index Expurgatorius" compiled by William Cullen Bryant as a guide to reporters in the writing of news.

Weeding Out

No less important than the selection, care and arrangement of the clippings is the problem of keeping the morgue free from useless material. Quite general is the practise of removing from the current files the envelopes containing clippings about persons who have died. For less important persons the clippings are destroyed, but persons of great prominence still live in the morgue. One librarian uses the following method: Each day he checks, in the death notices of the local papers, the names of persons about whom there are likely to be clippings on file. His assistants then bring him the corresponding envelopes, so that he may decide what shall be done with them. In only one case, hereafter noted, did I find a system for weeding out clippings other than biographical. This lack of system results either in the accumulation of useless material, or in the destruction of clippings which later are sadly needed.

There are two types of morgues between which newspaper librarians eventually must decide. To explain the difference between them, I can do no better than describe two morgues which represent the extreme development of the two types.

The largest development of the older type of morgues is seen in a collection made up of about 125,000 envelopes each containing fat bunches of clippings. The accumula-

tion dates from the year 1889, since which time no clippings have been destroyed. Last year, about 1,100 clippings were added each day, making a total for the year of nearly 400,000. The total number of clippings in all the envelopes is not known, but must run far into the millions. Each day the papers are marked, clipt and filed by a corps of five people. Papers are always clipt on the day after they are received, so that the morgue may truly be said to be up-to-date. The envelopes are of stiff manila, $4 \times 9^1/_2$ inches, opening with a flap on the side. They stand on their sides, on shelves about five inches apart, in steel stacks which extends to the ceiling, so that a long ladder is required to reach the top shelves. Biographical envelopes are in an alphabet by themselves. Other envelopes are arranged alphabetically with numerous subdivisions. The subdivisions of a subject, such as Standard Oil Company, are shown on the first envelope. Thruout, there are numerous cross references from one envelope to another. Subdivision of clippings about persons also is necessary. For instance, for William McKinley, there are 100 envelopes representing different phases of his life, and for Theodore Roosevelt, there are 150 envelopes. There is no list of subject headings either printed or on cards, and the choice of new headings is purely a matter of judgment on the part of the custodian. It is admitted, however, that such a list is much needed.

Each year about 25,000 requests for information are answered. Attendants are on hand twenty-four hours a day. Readers are not allowed in the "dead room," information being sought at a window. The applicant must present a blank signed by his editorial superior, which reads, "Please allow Mr. Blank to have the envelope on Trusts (for instance), and whatever information you may have on the subject." The attendant then gets the envelope, and usually searches thru its contents to find the particular information desired. The envelope and clippings are then recorded in a book and loaned to the applicant. If the envelope is not returned on the day when it is loaned, the attendant sends the following blank to the editor who signed

the application for loan: "Mr. Editor, an envelope of clippings on Trusts was given out to Mr. Blank. They have not yet been returned." The basic idea of this morgue is that only the staff shall handle the clippings and search for information. In most morgues readers are permitted to help themselves.

On the same floor, are two other files which, for our purposes, should be considered part of the morgue. The first is a series of envelopes containing metal cuts, and prints therefrom, which have been used in previous issues of the paper. The envelopes are of manila, $4^5/_8$ x $9^5/_8$ inches, arranged by number, to which there is an alphabetical card index.

In another room, are kept all photographs, reproductions, etc., which are likely to be of use to the paper. They are filed alphabetically in large envelopes arranged in wooden drawers. An accession book is kept, giving source and cost of photographs, for use by the business office in case of suit for infringement of copyright. There is a card index to pictures of scenes, but not of people. When a picture is of a group of noted people, cross references are made in the alphabetical files to the most prominent person under whose name the group picture is filed. In addition to collecting, and caring for the photographs, it is the particular duty of the custodian to prevent the use of pictures which have been copyrighted.

The second type of morgue, about to be described, differs from all others which I visited in one particular, viz., each item is filed separately. There are no fat envelopes in which a hundred or more clippings are crowded, and thru which one must search to find one bit of information.

The method of selecting and clipping items does not differ from that commonly used. The files stand in modern wooded sectional filing cases, the top drawers of which are at a convenient height for consultation. The cases are provided with locks. At the time when this morgue was visited, the personal clippings were in one file, other clippings in a second, small cuts in a third, and large cuts in a fourth.

The process of consolidating all the files except the biographical section had just been started.

The reorganized morgue will be made up as follows: As at present, all short clippings will be pasted on cards about 4 x 7 inches in size, and arranged alphabetically according to typed headings at the top. The date and name of the paper and the number of the page and column from which the clipping comes will be stamped at the bottom of the cards. Clippings too long to paste, will be placed in envelopes of very thin paper, on which will be typed the subject heading and information about the source of the clipping. If an item is too long to be treated in either of these ways, it will not be clipt, but indexed on 4 x 7 cards which indicate where in the bound volumes of a paper the item can be found. Metal cuts of appropriate size will be filed in stout envelopes; and there will be reference cards to large cuts which must be filed in larger envelopes separately arranged. There will, therefore, be only two places to look in order to find either the item itself or a reference to it, viz., the biographical file, and the file for all other subjects.

When this morgue was first visited, the subject headings were on cards, but a pamphlet of 119 pages has since been issued giving lists of subject headings, rules for filing, instructions to indexers, and regulations for the loan and use of clippings, photographs and cuts.

The separate treatment of each item makes of the morgue an approximate index to the newspapers clipt, but it is more nearly an index of the paper which maintains the morgue, because clippings from other New York papers are filed only when they differ substantially from the account in this paper. Moreover this is the only means by which this paper is indexed.

Instructions for weeding out the files are, therefore, very definite, and the necessity for such provisions is great since each item requires either a card or an envelope, and the files might easily become unwieldy. Weeding out "should be attended to, not once a year or once a month, but every

day," says the pamphlet. "The persons who file away the clippings should see to it that duplicates are destroyed, and that where clippings can be safely consolidated in one or more envelopes they should not be allowed to remain another day as they are. When a person dies, in nine cases out of ten, nothing more than the date, page and column need be kept, but no one must be allowed to throw away the clippings until that has been done and the work approved by someone in charge.

"A very important way of weeding out, is to copy the dates, pages and columns on foolscap sheets of paper—hundreds of them sometimes—thus saving valuable space in the cabinets."

The morgue is located in a large room remote from the library and used for many other purposes. Clippings are borrowed only thru the custodian, but there is no brass grating and no irritating red tape.

III. Bound Files of Newspapers

The remaining two divisions of the subject are closely connected with the preceding. The success of the type of morgue last described depends on the maintenance of the proper bound files of newspapers, and bound files are of comparatively little use unless they are indexed.

Of the papers visited, three maintained bound files of their own paper only. All of the others had rather extensive files of bound newspapers. One paper formerly had a large collection of bound files, but has transferred to the New York Public Library all volumes of New York newspapers except its own, of which only those since the year 1881 are retained.

It is usual to bind only the morning papers, presuming that all important news will be found in them. One office maintains three bound files of its own paper, placing one in a fire-proof vault, one in the main office, and one in a branch subordinate office in another part of the city.

New York newspapers run to so many editions that it is impossible to bind complete copies of each edition. The

method commonly employed is to make a composite volume containing the last edition and the pages from earlier editions in which changes have been made.

Use

The obvious reason for keeping large collections of bound newspapers is for reference purposes. The fact that one newspaper has been able to dispense with all except its own files, depending for others on the New York Public Library, raises the question whether all could not adopt the same method. One newspaper, however, gives an entirely different reason for its collection. It is stated that the files are used chiefly by the business office to check up advertising. A firm will enter into a contract to give a paper as much advertising as it gives to any other New York paper. To hold the firm to its contract the space in all papers must therefore be checked up.

IV. Indexes

Only four New York newspapers have ever issued printed indexes. Only one is now doing so, and this index is only for the editorial section of the paper.

The following is a list of printed indexes.

New York Tribune	1875–1906
New York Times	1894–1905
Brooklyn Daily Eagle	1891–1902
Evening Post	1908–date

The expense of printing an index is very great, and there is little or no financial return unless the time saved to the newspaper staff thru ease and quickness of consultation is taken into account.

To take the place of printed indexes, there are three substitutes in use. The first is the morgue itself in either of the forms already described. Bunches of clippings in envelopes are of course very poor substitutes for an index; but the morgue in which every item is filed separately according to a printed list of subject headings is fairly adequate, provided very rigid rules for the maintenance and use of files of clippings are enforced.

The second substitute is of two styles: first, on cards, one item on a card, arranged by subject; and second, on loose leaves fastened in binders, the common size of which is $4^1/_2$ x 9 inches. Each of these books is devoted to one subject, which is printed on the cover, so that it may be seen as the books stand on shelves.

The method of compiling these loose leaf indexes is as follows: Each day the indexer writes on slips of uniform size the items for the previous day's paper, giving date, page and column. These slips are then alphabeted, and their contents written or typed on the loose leaves, about fifteen to a leaf, which are then inserted in the proper binders. The items, of course, do not appear in strictly alphabetical order—a fact which is increasingly annoying as the books grow in bulk. This fact has caused some papers to divide the books for the larger subjects into annual volumes. This expedient has obvious disadvantages.

The third substitute is in use in only one New York newspaper office. It is very satisfactory, but is expensive, tho less so than a printed index. Eight men are continuously employed on it. The index passes thru two stages before it reaches the final form. First, the separate entries are written in pencil on 3 x 5 cards, one item to a card. Second, these cards are arranged alphabetically, and then given to a copyist, who types them on 5 x 8 cards, twenty or more items on a given subject appearing on each card. About 500 entries are made on these cards daily.

The final stage is reached when, once in two years, the entries from the large cards are cumulated in book form. Specially designed typewriters are used. They are about two inches wider than two pages of the book, and have type much resembling printer's type. As the entries are transferred from the large cards, they are arranged in alphabetical order. The date, page, and column of the issue of the paper in which each item appeared are indicated in orderly rows at the right of each page. The pages are assembled in volumes of convenient size, and bound in leather. The large cards are then destroyed, leaving the cabinets free for new cards.

When the index is being typed into book form, three carbon copies are made, so that there may be four bound copies of each volume. The original is preserved in a fire-proof vault, one carbon copy is sent to a branch office, another is filed away as a reserve copy, and the third, because it is least distinct and not so serious a loss in case of accident, is currently used.

The typed index in book form was begun in 1908. From 1835 to 1908, the index was in the common loose-leaf form. The result is that, at the present time, one must look in three places to be sure that every item on a given subject has been found. These places are, (1) the loose-leaf books (1835–1908), (2) the typed indexes in book form, and (3) the large cards which contain items which have not yet been transferred. As soon as possible, the items in the loose-leaf books will be cumulated into book form, so that the original records may be destroyed. It is not the intention to print the index, first because the present system is satisfactory, and second, because the estimated cost of publishing is prohibitive.

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VII

THE PASSING OF THE RECAPITULATION THEORY AND ITS MISAPPLICATION TO TEACHING

In discussing the recapitulation theory, one fact needs to be held clearly in mind, the theory as originally promulgated by Haekel is by modern biologists emasculated and discredited. The revolt of the European biologists has been well nigh universal and such is largely the case in America and England. No biologist of to-day would assert that there is an exact repetition of ancestral forms in the development of the individual, and the erection of a "family tree" for such evidence would be absurd to modern embryologists. The theory has signally failed to maintain itself in what should be its largest field of usefulness, that of systematic zoology. Whatever there is of truth in the theory is so vague that it finds no place in biology for definite application.

"How to teach" has been since the earliest days of teacher and pupil a never ending question and for that matter will always be, since in its last analysis the problem is an individual one and not that of method. Great teachers arise and we have a Socratic method, a Pestalozzian method, each making a valuable contribution but giving no final solution.

It is small wonder then, that Haekel's recapitulation theory should be hailed as the opening key. For what indeed could be simpler? If the individual recapitulates in his individual development the ancestral history of his race, all the teacher need do is to outline a course of study according to such racial development. Students of child psychology swallowed the theory with avidity, and marvelous elaborations of the theory were made such as G.

Stanley Hall's *Adolescence* in which psychic evolution is discust, a book of such compelling interest that it seems criminal to hint that its basic structure is false.

The question at issue is, does the individual in his intellectual development pass thru stages which recapitulate periods of advancement in human history to the present; or more concretely, does the child pass thru stages in its mental growth comparable to the mental development of the savage, the semi-civilized, the civilized, and to continue the wording of the old geography, enlightened?

Some of the proofs for such a recapitulation are most amusing. Boys form clans, love to fish and hunt, consequently this stage must represent, in following out the theory, the savage stage of the race. But where then shall we place the secret society of the man with its gaudy paraphernalia and frequent horse play? Does the father of the boy chief represent a stage of decadence when in his society of Red Men he bedecks himself with feather and hatchet? In boy and man both alike are expressions of a love for the mysterious and the histrionic.

But to fundamentals, tho the question is iconoclastic, to what extent has there really been a racial evolution of the mind and especially when? It is granted at once that there has been a marvelous increase and broadening of knowledge. But has there been a noticeable increase of brain power or of the physical development of the brain in the last five or ten thousand years, a period of time during which man has practically past from the savage to the present stage of enlightenment?

To make the question concrete, suppose that Charles Darwin or Thomas A. Edison had lived in the time of Aristotle, 2294 years ago, would their mental powers have so largely overtowered those of the Greeks that we would recognize in them a new type of mind? Or to reverse the situation, place Aristotle in the chair of Natural History at Harvard, would his personality sink into relative insignificance in comparison to men in other departments? If you wish to go back further in the history of the race, what is

the assurance that the brain capacity of the man who invented the bow and arrow, the needle, the fish-hook, is intrinsically less than that of the man who discovers radium or invents the phonograph?

An evolution of brain stuff there has certainly been in the evolution of the whole animal kingdom, but the idea is entirely a conceited one which so widely differentiates the brain of man from that of other animals. Practically man's only advantage is his ability to store up knowledge and experience. An evolution of brain there has been but the time of recorded human history, from the stone age, compared to the total time for the working out of brain stuff is but a moment in all of time.

The fundamental error of the recapitulationists when applying the theory to psychology and education is that they have interpreted the general increase in human knowledge to indicate a corresponding evolutionary increase in brain stuff and brain power. True, the sum total of knowledge is ever increasing; but it is a cumulative aggregate. We start where the other fellow left off. Our achievements are recorded and the succeeding generations use them as stepping stones to further advance. In the development of a knowledge of electricity there must needs be a Franklin before an Edison, but that does not catalog Franklin in a lower grade of intellectual development.

What shall be the criteria of brain capacity? Greek roots or adaptability to environment? Take two brothers, place one in Columbia, the other on Crusoe's island. Is the mental development of the island boy checked? Certainly not. He may know less of Latin but infinitely more of woodcraft. Teachers forget that there are things in this world other than that they teach. Savages and prehistoric races are not "only children and adolescents of mature age."[1] Their brain processes are in kind identical with those of the most advanced thinkers of this golden age. The difference between the savage and the enlight-

[1] *Adolescence*, Vol. II, p. 51.

ened man, wide as it appears to be, is largely one of training and not capacity.

Stone-man, savage, semicivilized, civilized, enlightened, so far as brain evolution is concerned, are incidents not stages or parts of stages in the total brain evolution. Let us examine a direct application of the theory. If an increase in the sum total of knowledge is taken as an evidence of mental evolution or development, surely the last four hundred and fifty years, or since the time of Copernicus, would give abundant evidence of a marvelous increase of brain development. But such evidence is wanting.

Brain process, and this is the key to the treasure house of education and educational methods, is everywhere the same; the advance is always from the individual to the general, from the concrete to the abstract. The law is universal in its application to man and to animals. The trick elephant learns his act after numberless repetitions; no savage but must try his hand at explaining the universe and with about as much success as did our own ancestors seven hundred years ago.

But says one, there is an "evolutionary" increase in brain capacity during the growth of the individual from babyhood to manhood. Why an "evolutionary" growth? Why not simply use the term "growth"? We do not speak of the evolutionary growth of the baby's muscles or of the evolution of its sex organs. Certainly the non-functional stage in the development of the sex organs does not represent a stage in racial history when there were non-functional sex organs! The term evolution has been applied because in the mental development of the child it passes from simple to complex ideas, a common misapplication of the term.

Psychologists have run riot in naming functions for the mind, as if the mind acted in parts and not as a whole, and having run riot they now attempt to justify themselves by picking out periods in the mental development in which certain functions predominate, as stages of development. Does the fact that a child has a very retentive memory, more so than in later life, indicate a time previous in racial

history when the chief mental process was that of memory? The memory process is practically the only process in which the mind of the developing child may be active; since it is certain that there can be no thinking, that is comparing, reasoning, without a sense perception of things about which to think. The child's mind is occupied in securing these sense perceptions and necessarily could not occupy itself in any other way.

But there remains the idea that the mental development of the child would be easier and more rapid if it followed the steps thru which the race has attained its breadth of knowledge from prehistoric time. The following is quoted from a recent number of the EDUCATIONAL REVIEW: "If a child is placed in a certain mental attitude and that certain attitude leads to another, and these successive steps are the same that the man, back in the stone age, followed to make certain a discovery, the child will make this same discovery."[2] Just as certainly as cause and effect. Personally, I have no doubt that if a child from the Stone age, were placed in a modern city flat that it would learn to use slang, play on the pianola, and use roller skates just as does the modern city product.

Is there such a thing as racial memory, a path of least mental resistance? Would it be practical or advantageous in the education of the child to follow the historic development of knowledge from the earliest times? An example proposed is that of teaching reading and writing by means of an introductory development of picture writing, the idea advanced being that since picture writing was the earliest method of writing, the child thru this unconscious racial memory would more completely grasp the idea of writing. The child's interpretation of picture writing would, of course, depend upon the ability of the artist. But carry the experiment to completion and the child gains nothing since the moment the symbol has taken away from it its picture value, any other symbol serves as well. A glance at a comparative table of alphabets shows certainly that our

[2] W. M. Winton, EDUCATIONAL REVIEW, December, 1910, p. 521.

present type bears few ear-marks of an age of pictures. The five-year old tot needs no elaborate explanation that certain black marks stand for definite ideas, since beside the pictures in her primer stand cabalistic signs she knows at once mean cat and dog and ball. Shall a child be compelled to study phonetics before it learns to talk?

Such a historic method would require a complete review for each individual, of all the knowledge of the past, the false as well as the true. Shall the freshman believe the sun to be a chariot of fire; the sophomore in the Ptolmaic theory; the junior in the Copernican theory; while the learned senior gives a new solution for the universe? Such is the absurdity into which educational recapitulationists have placed themselves.

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VIII

REVIEWS

Medical Education in Europe—A report to the Carnegie Foundation for the Advancement of Teaching. By ABRAHAM FLEXNER; with an introduction by HENRY S. PRITCHETT, President of the Foundation. New York: Published by the Carnegie Foundation. 1912. 357 p.

The Carnegie Foundation for the Advancement of Teaching has followed up its report of two years ago on *Medical education in the United States and Canada* with one of equal length on *Medical education in Europe*. Like the former, the second report is by Mr. Abraham Flexner and is the result of a detailed and thoro personal study of the conditions of European medical education. How fully the author has mastered an excessively intricate subject is indeed surprizing, and it is gratifying that he is able to present a clear picture of what to most American medical educators has always appeared confusing. There is no separate characterization of each of the individual schools, as in the American report, but there are very full discussions of such topics as the number and distribution of physicians, the basis of medical education, the preliminary sciences (physics, chemistry and biology), the medical sciences, clinical instruction, curriculum and examinations, financial aspects of medical education, sects and quacks, postgraduate instruction, and medical education of women.

Medievalism, "veneration for authority and contempt of things," long held back medical education, even when medical practise was going forward. Clinical instruction was indeed present at Leyden as early as 1630, but the modern scientific spirit can hardly be said to have invaded the German universities before the founding of the University of Berlin under Humboldt's influence in 1809. Now Germany, of all countries, presents the highest type of medical

education, organized on a university basis. Great Britain, on the contrary, is still under the baneful influence of the proprietary form of school. In both countries the profession is overcrowded, a condition which is thus obviously not due to the educational standard.

All German medical students must have graduated at a classical *Gymnasium*, a *Realgymnasium*, or a Higher-*Realschule* (with the addition of Latin). Along with the growing importance of the two latter scientific secondary schools they are contributing an increasing proportion of students of medicine—in 1910–11, 21.1 per cent—altho the question of the comparative values of the three secondary disciplines is still being discust by the medical faculties. The humanistic tradition is bound to lose force in the long run, if only because of the increasing severity of the demands of medical study. France has taken a step forward, for in addition to graduation from the lycée she requires her intending medical students to study the preliminary sciences for one year. In Great Britain the preparation for such study is less organized, several alternatives are allowed, and the minimum requirement, comprizing the passing of examinations in four subjects of elementary grade, none of which need be a science, is distinctly low —a boy of average intelligence may fulfil this requirement at the age of fifteen. In lieu of appropriate preparation Germany and Great Britain require and afford training in physics, chemistry and biology (zoology and botany in Germany) in the early part of the medical course. Mr. Flexner presents weighty objections to such an arrangement, such as the present enormous overloading of the medical curriculum, the deferring of the acquisition of the scientific spirit and method until mature years, and the character of the instruction offered in such basic sciences; and he strongly urges the transference of them to the pre-medical period.

He discusses at length the status, in the countries named, of undergraduate instruction in the medical sciences, anatomy, physiology, pharmacology, pathology, bacteriology, hygiene, and legal medicine. In Germany, practical

work by the student is preëminent in the various divisions of gross and microscopic anatomy; in physiology it is poorly developed, apparently being far behind its status in the leading schools of the United States; in pharmacology it is non-existent; in pathology it includes gross and microscopic work, but not the experimental side of the science; in bacteriology practical work is offered but is not required. The work in these various subjects is not well coördinated; there is too great a predominance of the traditional lecture; and lecture and laboratory are not organically related. But beyond all such defects there is the spirit of research, and this vivifies all instruction. In Great Britain, physiology alone has established itself on an elevated plane. But not so the other medical sciences, which are still largely undeveloped and regarded by the clinicians as inferior departments of knowledge. In all the experimental branches the antivivisection laws are annoying and obstructive. Except in some of the universities the medical schools are largely commercial affairs and the laboratory sciences suffer therefrom. In France the clinical idea dominates all medical education and the sciences are relegated to a secondary place.

One-quarter of the present report is devoted to a discussion of clinical instruction. The German clinician is first of all a university professor, and his laboratory is the hospital. Like other professors he is not wedded to one university, but migrates from one to another as his worth justifies his being called. Hospitals are sometimes state and sometimes municipal institutions, but always available for university purposes. Administrative and medical features are sharply separated, and in the latter the medical professors are supreme. The three functions of hospitals are healing, teaching and research. Clinical material is very abundant, laboratories are everywhere, and "research is in the air." The actual training of the undergraduate is, however, far from ideal. The demonstrative lecture, luminous and exhaustive, dominates. The students listen and learn what they can, but have little opportunity to get

in touch with the patient until their final year, which is past in an interneship in a hospital. The arrangement of their courses is far from orderly and logical, and the curriculum is congested. What is desired is greater simplicity in the curriculum and the more active participation of the students in practical work with patients.

The hospitals of Great Britain, on the other hand, are voluntary, not governmental, institutions, and the British clinician is a type very different from the German. He is a doctor seeking to cure the individual patient, rather than to master and eliminate disease. He may occasionally be eminent in medical science, but research is not essential to his career. He does not migrate, but beginning as a student in a certain hospital he adheres to it and rises by steps in its service. Clinical laboratories are limited, and clinical research is almost wholly lacking. But while the scientific spirit is largely wanting, every effort is made to bring the student and the patient together and allow the former to watch the progress of the disease and participate in the treatment. The inevitable British examination is the immediate goal, and the highly trained "practical" as distinguished from the scientific, physician is the ultimate result "What is essentially characteristic of medical education in Great Britain and in Germany is, therefore, complementary: the former lacks ideas, the latter lacks practise, and either may be grafted on the other." The British reform will come when its medical schools cease to be proprietary and become with their hospitals university institutions.

In France one evil is lack of coöperation and integration. The schools are within the pale of the universities, it is true, but the hospitals are municipal charities. There is no intercourse between the followers of the medical sciences and the clinicians. Nor is the clinical laboratory prominent. The student acquires the "bedside habit," and like the young Englishman lacks the breadth of the scientific basis.

Medical sects do not flourish in Europe. Homeopathy

alone has a following, but it is feeble and disappearing. Quackery, however, thrives—nature-healing, occultism, Christian Science and other forms—and for this, unwise legislation is largely responsible. Postgraduate instruction is not well provided for in either Great Britain or France. In Germany, besides the welcome that is almost invariably given to those physicians who desire to improve their clinical experience, various organizations, such as the Central Committee for Postgraduate Medical Education and the Association of Docents at Berlin, exist for the furtherance of postgraduate study. Undergraduate medical instruction for women is now nearly universal thruout Great Britain and Germany, and the number of women students is increasing.

In his first report to the Carnegie Foundation, Mr. Flexner discust American medical education by itself. This second report is devoted to a comparative treatment of the subject as exemplified in Germany, Great Britain and France. It would have been still further enlightening to American medical educators if he had also instituted a comparison between the foreign and our own schools. Out of his intimate knowledge of the conditions on both sides of the Atlantic, he could have done this more intelligently than could a reader of the two reports. Thruout the present book the author emphasizes the point that medical education is primarily an educational, rather than a medical, problem, and this is well urged also by Mr. Pritchett in his introduction. Those who are interested in this phase of professional education are greatly indebted to Mr. Flexner and the Carnegie Foundation for an illuminating contribution.

FREDERIC S. LEE

COLUMBIA UNIVERSITY

Zum deutschen Kultur- und Bildungsleben. Fünfte Sammlung vermischter Aufsätze von WILHELM MÜNCH. Berlin: Weidmannsche Buchhandlung. 1912. 338 p. M. 6.50.

The present book is the fifth volume of collected papers

to be published by the author, the well-known Professor of Pedagogics in the University of Berlin.

Most of the articles contained in the volume have appeared before in various journals. Three of them in their original form were addresses held at philological meetings in Hamburg, Hannover, and Zürich. Three appear here for the first time: Cultural Progress and the Present, On the Conception of the Term Classic, and The Soul of the Principal City of the Empire. As is the case in the author's previous writings, the essential standpoint of this volume, too, is pedagogical, but like all of them its contents go far beyond the narrower bounds of pedagogy and concern themselves as well with the broad cultural aspects of the subjects of which they treat. All of these papers contain the reasonings and the conclusions of a mind that thinks straight and sees clearly from the fundamental attitude of the wide personal experience of a teacher, but with the added viewpoint of a critic and philosopher who has observed and knows the world and his century and appreciates the meaning of these elements as common factors in the problem of education.

In Cultural Progress and the Present, the author asks the question whether humanity today would not be robbed of one of the surest sources of satisfaction if its conviction of the positive progress of culture were to be shattered. His conclusions, however, are that in the things of life, either of the individual, of society, or of the state, in religion, in education and in art, alike, the progress of culture is not inevitably forward and upward, and whether its path leads up or down is at the moment difficult to tell.

In reading the Soul of the Principal City of the Empire, which is altogether the most accurate analysis and the most significant appreciation of the real meaning of the life of Berlin that has been written, one is struck anew by its "Americanism"—a characterization, however, by no means new nor originally made by the present author, who reaffirms it. The "Americanism" of Berlin, nevertheless, is not due, as the author supposes, at least in any dominant

degree, to the cosmopolitan character of the population and its relatively recent character, but to other and much further reaching conditions that belong to Germany as a nation and not merely to its principal city. What is not infrequently called "American" in Germany, and often invidiously, is, however, there as here, only a manifestation of the *Zeitgeist* that is an evolution of the new conditions of a modern industrial state awake to the necessity of activity and initiative to an extent never before imagined and expressing itself necessarily, under fundamentally similar circumstances, in essentially the same manner in America and Germany alike.

Of a more strictly pedagogical character are: International Conditions in the Field of Education; The School and the Personality of Pupils; Instruction and Interest; Types of Pupils; Pedagogy and Academic Study; The University and the Higher Schools; Scholar or Teacher?; and two noteworthy essays on the teaching of modern languages, The Preliminary Training of Modern Language Teachers, and Living Languages and Living Language Instruction. All are characterized by the enlightened spirit of a scientific pedagogy built upon a genuine understanding of the true significance of teaching in the life of the community, both to the teachers and to the taught.

Since the above was written news has come of the sudden death in Berlin of Professor Münch in his sixty-ninth year. In his death not only has the University of Berlin suffered the loss of one of its most distinguished scholars and teachers, but the science of pedagogy, in its broadest sense, has lost one of the most active and important contributors to its literature of his generation.

WILLIAM H. CARPENTER

COLUMBIA UNIVERSITY

An Introduction to German—BY EDUARD PROKOSCH, PH.D., Assistant Professor of German and Comparative Philology in the University of Wisconsin. New York: Henry Holt & Co., 1911. x 316 p. $1.15.

That a potent teacher can successfully teach German from

a wretchedly written grammar, that an impotent teacher can not successfully teach German, tho the grammar he uses may have been written by one who speaks with the tongues of men and of angels, that there come moments in the life of any teacher when he wishes he had no grammar at all, that the teaching of German in this country is still in its infancy and therefore misunderstood and unappreciated by many, that teachers of German in this country are, therefore, confronted by peculiar and sometimes annoying conditions over which they have but slight control, that to make conversation an end rather than a means is an intellectual folly, that to make syntax and translation an end rather than a means is an academic indiscretion, that a combination of these two "methods" frequently results in something that resembles neither fish nor fowl nor good red herring—all these things and others are, or should be, perfectly apparent to any intelligent human being who has been more than morganatically married to the business of teaching German for at least a decade. The man, therefore, who increases by one the already large number of German grammars, good bad and indifferent, should offer new material or new methods of presenting old material. Dr. Prokosch slightly does the former and largely does the latter. Literally speaking, it can not be said that his is an average or mediocre book; for it is either very good or very bad.

The general appearance of the book—Holts have had invaluable experience in publishing German grammars—the map of the German Empire since 1871, the condensed and clear exposition of the elements of pronunciation (pp. 1–3), numbers 16, 21, 22, 23, 25, 28, 31, and 32 of the thirty-two texts, and the admirably stated rules followed by German expressions that really illustrate—all these things are extremely good and some of them are original.

But the arrangement of the book is not logical, not pedagogically sound. Reference is not made here to the double, mixt pagination between pages 180 and 197, but to something much more vital. Everything between pages 47 and 134 could, and therefore should, be omitted, in college

work, except the German-English vocabularies, which should be grouped and placed alphabetically at the back of the book, and the English-German translations, which should be modified and placed between pages 135–180 and 197–256. Then, the advisability of grammatical terms in German (pp. 257–264) is doubtful. Dr. Prokosch is aiming at "a *können* instead of a *kennen* of language and grammar" (p. v). This is a clever sentence; it is alliterative and appreciable! But grammatical terms do not make good material for "conversation." Grammatical nomenclature at best is complicated, confused (cf. *present perfect, perfect, past, preterite and imperfect* in various grammars to express frequently the same idea) and confusing, and far removed from the everyday vocabulary to be acquired by those who wish to speak a living language other than their own. The insistence upon this sort of drill by Dr. Prokosch is possibly to be explained on psychological grounds: such a term as *besitzanzeigendes Fürwort* is more natural to him. Let, for example, an individual whose mother tongue is English speak German ever so well, there are at least four occasions when he will unconsciously fall back into English: in counting money, in praying, in calling for help from a capsized canoe, and in discussing grammar. So why clutter the mind of the student, who is after *können*, not *kennen*, with just this class of words, and especially in German, where a *noun* is either a *Nomen*, a *Substantiv*, a *Dingwort* or a *Hauptwort!*

The same may be said of the section on phonetics (pp. 265–289). Tho ability to analyze sounds is not only desirable but indispensable in the case of the teacher, too much of it will intimidate the student and make him painfully self-conscious. Anyhow, the situation is this: there are 50 odd sounds in German. About 50 of them can be acquired without "phonetics," while it is the others—and cadence and *timbre*, where "phonetics" fall short—that really betray the foreigner. Also, phonetic transcription simply devours the time of the student who is after *können*, not *kennen*.

Dr. Prokosch has, however, written an interesting grammar. An experienced teacher, once accustomed to assigning a lesson from five different parts of the same book, can use it with success and pleasure. But in the hands of a teacher more enthusiastic than experienced, it is a question as to whether the college student will get a clear perspective of the German language as a whole—and it is this that he needs if his *kennen* is to be real and his *können* worth while.

ALLEN WILSON PORTERFIELD

BARNARD COLLEGE
COLUMBIA UNIVERSITY

The teaching of physics for purposes of general education—By C. RIBORG MANN, Associate Professor of Physics, University of Chicago. New York: The Macmillan Company. 1912. xxv + 304 p. $1.25.

Few teachers reach the age of forty without a keen realization of the fact that, after all has been said and done, what the teacher can do for the student is an amazingly small quantity when compared with what the student must do for himself if he is ever to acquire the habits of the scholar and the power of clear thought. Indeed, the longer one teaches the more he sympathizes with a remark which Mr. Roosevelt let fall in his campaign speech at Newark, New Jersey: "I left college about thirty-three years ago, and began my education."

And of us whose teaching days have been cast in the laboratory, are there any whose experience covers as many as even ten years, who do not feel that the laboratory as a means of putting the student into immediate contact with nature has been immensely over-estimated? Happy that laboratory instructor who has never seen the observational powers of his student atrophy in a daily or weekly attempt to fill out, in a perfunctory way, certain laboratory forms, and obtain the desired O. K. before the afternoon was spent.

Has any teacher of physics ever reached fifty years of age without wondering whether the modern laboratory equipment really gives the student as much opportunity for

development as did the meagre outfit in those early days when lecture apparatus could not be reserved for its peculiar purposes, but had to be used all over the laboratory, when much of the apparatus was so crudely made that it never "worked" till the student *made* it "work"?

Has any man ever given an elementary course of experimental lectures in general physics without marveling at the odd bits of information, the bizarre ideas and the misconceptions which the average student carries away from the lecture room?

In these queries, we do not refer to the advanced student or the exceptional man, who will take care of himself under all conditions, throw aside all authority, and grow by overcoming every difficulty before him. We refer to the average American student and ask what, beside a little information of doubtful value, is he getting out of his work in physics?

Is there any competent teacher who has not experienced difficulty in navigating a proper course between the practical applications of physics, which he knows will hold the interest of the students, and the general principles of physics, which he knows to be irksome to the student, yet essential for any firm grasp of the subject?

Doubts and questionings of this kind in the mind of every thoughtful instructor render this volume from Professor Mann very timely. For in its pages we have the helpful suggestions and the constructive criticism of one who has given many years of thought to the betterment of instruction in physics in America. The editor's introduction contains eight "fundamental principles" full of suggestion to every teacher; and of especial interest as coming from one outside the guild of teachers of physics. One can not but wonder, however, whether President Butler realizes what a tremendous program he is laying down when he suggests that the secondary teacher should see that the student is familiar with what physical science owes to "Archimedes, Galileo, Torricelli, Newton, Kepler, Gauss, Young, Gay-Lussac, Davy, Faraday, Helmholtz, Kelvin, Ampère, Joule, Mayer, Fresnel, Galvani, Volta; that he will understand

clearly the significance of the inductive method, of the verification of hypotheses, and of the formulation of the laws of nature." Here is President Butler's last theorem, and one which, as an ideal, every teacher of physics must applaud: "Far too much has been made in recent years of accuracy of measurement.....The main task is to teach the constitution and behavior of matter as it presents itself to the human power of perception and the laws of motion as these have been observed and deduced, together with the relation of them to man and his activities." To pronounce trippingly on the tongue a theorem like this is one thing; to realize the difficulty of reaching any such goal with American secondary students is quite another thing.

The key note of Professor Mann's volume is found in his prefatory remark that the "distinction between cultural and vocational seems to be wholly beside the mark in any true system of education," and in a parallel remark quoted from President G. Stanley Hall to the effect that "whether a topic is cultural or practical depends wholly upon the point of view and the spirit."

The first four chapters of the book are devoted to what is called The Development of the Present Situation. They constitute a really discriminating history of elementary physics in America during the last thirty years. Every teacher of physics will be repaid for reading Chapter IV, dealing with textbooks, in which are cited a number of terrible examples, showing just how *not* to do it. Those of us who have been working under the superstition that all one has to do to make a subject concrete is to set before the senses of the student a collection of physical objects should read and reread section 27 on Generalized Bodies, and section 111 on the Real Purpose of Laboratory Work.

Next follows four chapters devoted to Physics and Democratic Education. Here the author is at his best. The rise of modern physics is traced in a manner which is at once scholarly and attractive. The birth of modern physics is connected with the unscientific past thru the four following steps: (1) First came a human need giving rise to a real

problem, whose solution was found by a method of approximation and experimentation. (2) The solution of one problem gave rise to new needs and more difficult problems. (3) The success and expediency of this "method of industry" came to be widely recognized. (4) "When large bodies of men had thus become accustomed to thinking in this way, the time was ripe for the extension of the method to the solution of more general and more abstract problems. Then it was that modern physics proper began. The fact that physics did not begin until commerce and industry were well developed is one of the fundamentally important facts to remember when studying the problem of how to use physics for purposes of general education." The fertility of Germanic industry and the sterility of Greek methods, including the statics of Archimedes, are set forth in fine and true perspective, illustrated by numerous examples, and pointed by the following line from the Aeneid:

"Timeo Danaos et dona ferentes."

Chapter VII, entitled the Biography of Physics, follows in a historical way the main lines of work in physics from the time of Galileo and Newton down to the time when the doctrine of energy makes its appearance. As an aid in giving the student a correct perspective, all teachers will find this chapter especially helpful. The idea of force—the *bôte noir* of all who care to treat physics in a strictly logical manner—comes in for only a brief discussion. It is to be hoped that the author will, either in a new edition or elsewhere, explain at greater length his views on the proper presentation of force—a topic which is absolutely fundamental for every teacher who wishes to put the subject of physics clearly and simply.

The last four chapters are given over to Hints at Practical Applications. Every page of this third part is full of interest for the teacher of physics in the secondary school. The program, the aim of the course, the tests, the problem of laboratory work, are all presented from various viewpoints.

The volume is printed in a worthy manner. The un-

glazed paper and the large type are a source of comfort to every reader. Typographical errors are practically absent; one in the second line of page 148, and another in the seventh line of page 169.

American teachers are indebted to Professor Mann for the judicial presentation of these difficult questions. Few readers will close the volume without increased open-mindedness toward the questions under discussion.

HENRY CREW

NORTHWESTERN UNIVERSITY
EVANSTON, ILL.

Who's who in America for 1912–13 is an advance in clearness and accuracy even over its very complete and very accurate predecessors. This volume has become an absolutely essential book of reference and should be on the desk or within the reach of every person who has occasion to write, or who wishes to know the precise facts regarding any prominent or representative American. A somewhat constant use of the volume has failed to reveal in it any important inaccuracy. (Chicago: A. N. Marquis & Co., 1912. 2640 p. $5.00.)

Folk festivals by Mary Master Needham will be found useful and helpful by those school teachers and officers who are engaged from time to time in the organization of public celebrations. The book is almost the first of its kind and is very suggestive. (New York: B. W. Huebsch, 1912. 244 p. $1.25.)

In reading *Modern science and the illusions of Professor Bergson*, we have no doubt that the average intelligent reader will find that his emotions are a composite of impatience, amusement and contempt. The book is a preposterous piece of ultra-scientific dogmatism, with a characteristically dogmatic preface by Sir Ray Lankester. The gist of this preface may be gathered from the following allusion to Professor Bergson's writings: "To those who in a thorogoing way occupy themselves in collecting and comparing and classifying all the absurdities which have

been put forward as 'metaphysics' or 'metaphysical speculation' since the days of Aristotle, this latest effusion has, no doubt, a kind of interest such as a collector may take in a curious species of beetle. To the student of the aberrations and monstrosities of the mind of man, M. Bergson's works will always be documents of value. But it is an injustice as well as an inaccuracy to speak of their author as 'great,' or 'French,' or a 'philosopher.'" Despite a few valuable critical passages, it must be said that the book on the whole is not worth the paper it is printed on. (New York: Longmans, Green & Co., 1912. 257 p. $1.60.)

We welcome the posthumous volume by Professor William James entitled *Essays in radical empiricism*. This is not the place to deal at length with the suggestive contents of this book, but the reader will find in it many signs of a final philosophy quite different from the *Pragmatism* with which the author's name is now chiefly associated. (New York: Longmans, Green & Co., 1912. 283 p. $1.35.)

As a specimen of editorial selection and collection of value for the student, we call attention to the stout volume entitled *The classical psychologists*, compiled by Professor Benjamin Rand of Harvard University. The selections illustrate the progress of psychology from Anaxagoras to Wundt. We are glad to see a just amount of space given to Thomas Aquinas, to Friedrich Beneke and to Maine de Biran. (Boston: Houghton Mifflin & Co., 1912. 735 p. $3.50.)

Professor I. Woodbridge Riley of Vassar College is, we believe, chiefly responsible for the new series of publications entitled Early American Philosophers in which the first volume, Witherspoon's *Lectures on moral philosophy*, has just appeared. It is delightful to find this old-time American book once more made available, and we are glad to see the announcement that it is to be followed promptly by Professor Samuel Johnson's *Elements of philosophy*. (Princeton: Princeton University Press, 1912. 144 p. $1.50.)

It was a grateful act of academic piety that led Professor Eduard Spranger of Leipzig to bring together in one volume,

under the title of *Gesammelte Pädagogische Abhandlungen*, a large number of the papers and essays of the late Professor Friedrich Paulsen. As might be expected, the book abounds in wisdom and in information, in philosophy and in spiritual insight. We commend it unreservedly to American students of philosophy and education. (Berlin: J. G. Cotta'sche Buchhandlung, 1912. 711 p. 9 M.)

Mr. W. E. Rhodes has translated from the French a volume entitled *Studies and notes supplementary to Stubbs' Constitutional history* down to the Great Charter, the author of which is M. Charles Petit-Dutaillis, Rector of the University of Grenoble. It goes without saying that the scholarly author has brought together here the fruits of prolonged research in the field of English institutional history. (New York: Oxford University Press, American Branch, 1912. 152 p. $1.40.)

Forty years ago there used to be a book that was often found in American libraries entitled *Familiar science*. It was very useful because it covered a wide range of scientific facts in language comprehensible to the general reader. Miss Bertha M. Clark of the William Penn High School for Girls in Philadelphia has just written a similar book with the title *General science*. It will serve a real need inasmuch as it is clearly written, well arranged and brings the facts with which it deals down to date. (New York: American Book Company, 1912. 363 p. $1.50.)

A piece of solid scholarship is contained in *A handbook of the modern Greek vernacular* by Professor Thumb of the University of Strassburg, translated from the German by Dr. Angus of Edinburgh. (Edinburgh: T. & T. Clark, 1912. 367 p.)

The charm of Schiller's personality and his purely literary reputation have frequently concealed from view the fact that he had, and taught, a philosophy that was simple, progressive and deeply ethical. An interesting and well written examination of this aspect of Schiller is offered in the volume entitled *The philosophy of Schiller* by Professor Emil C. Wilm, of Washburn College. (Boston: John W. Luce & Co., 1912. 183 p. $1.50.)

The rapid progress in the instruction of physiography will provide a ready welcome for *Laboratory exercises in physiography* by Messrs. Smith and Stahl and Miss Sykes of the Chicago high schools which has just appeared. (Boston: D. C. Heath & Co., 1912. 144 p.)

In the Handbooks of English Literature we welcome *The age of Alfred*, by F. J. Snell. The period covered is from 664–1154, rather a wide stretch of years, and the author treats Heroic Poetry, Religious Poetry, and Prose, giving proper attention to the great Anglo-Saxon Chronicle. (London: George Bell & Sons, 1912. 355 p. 3s. 6d.)

A review of our present knowledge regarding prehistoric man is brought together in an attractive volume entitled *Prehistoric man*, by Dr. Duckworth, Lecturer at Cambridge University. The illustrations are capital. (New York: G. P. Putnam's Sons, 1912. 156 p. 40c.)

Abbé Klein commands a most agreeable style and one greets with enthusiasm the new book from his pen. The last entitled *Mon filleul au Jardin D'Enfants* is a fascinating exposition of the kindergarten in its philosophy and practise. (Paris: A. Colin, 1912. 254 p. 3f.50.)

We have received a new and revised edition of a very elaborate book entitled *English composition in theory and practice*, by five members of the teaching staff of the Sheffield Scientific School of Yale University. As we examine one after another of books of this type, we can not help wondering whether the teaching of written English is not being greatly overdone in the colleges and spun out to an extent that can not be justified by results. This particular volume is certainly all inclusive. (New York: The Macmillan Co., 1912. 466 p. $1.25.)

Education in Scotland, by W. J. Gibson, Rector of the Nicholson Institute at Stonaway, is an excellent piece of work. It sets out clearly and connectedly the development of education in Scotland, and traces that impressive movement so abundant in results, to its sources. (Longmans, Green & Co., 1912. 151 p. $1.00.)

In the series of English History Source Books, there has

just appeared a new volume entitled *American independence and the French Revolution*, edited by Mr. S. E. Winbolt. Teachers of history will find some excellent material here, not a little of which is ordinarily overlookt. (London: George Bell & Sons, 1912. 120 p. 1s.)

Another good book from the same publishers is *An introduction to English industrial history*, by Henry Allsopp, Vice-principal of Ruskin College, Oxford. The part played by the peasants' revolt, by the building up of the wool trade, and by the movement toward the towns, is described in a most interesting and a most instructive way. (London: George Bell & Son, 1912. 160 p. 2s.)

A good introduction to physics for schools and colleges is entitled *First principles of physics*, by Professor Carhart, of the University of Michigan, and Mr. Chute, of the Ann Arbor High School. The treatment of electricity is practical and thoroly up-to-date. (Boston: Allyn & Bacon, 1912. 412 p. $1.25.)

A book which we venture to think is quite unnecessary in view of the many excellent and better done books already available is *Elements of economics*, by Messrs. Burch and Nearing, of Philadelphia. We do not find anything in this volume to distinguish it from fifty others. (New York: The Macmillan Co., 1912. 361 p. $1.00.)

Assistant Professor Fairchild, of the University of Missouri, has published a critical study of poetry under the title, *The making of poetry*. Many of the critical views of the author seem to us far-fetched and the entire treatment rather lacking in virility and grip. (New York: G. P. Putnam's Sons, 1912. 263 p. $1.50.)

IX

NOTES AND NEWS

University Administration

The attention of the EDUCATIONAL REVIEW is attracted from time to time by articles that appear in various journals containing sweeping charges of maladministration in American universities generally. The readers of the EDUCATIONAL REVIEW are very much interested in questions of university administration, and inquiries are frequently made by readers as to whether the REVIEW can furnish some specific evidence in support of the general charges that have in recent years been so freely made.

We very much fear that those who make these charges will insist upon resting concealed by the fog of their general vagueness. If the contrary is the case, however, the EDUCATIONAL REVIEW stands ready, now and always, to print any temperate and non-libelous article, signed by a responsible person, that will indicate one or more instances occurring during the past twenty-five years of university maladministration. This proposal is intended to include evidence either as to the misuse of university funds, as to the dependence of any professor's salary on the favor of any president, or as to the dismissal of any professor by any president without a hearing, with or without the consent of any board of trustees or a committee of such a board. It is also intended to include any other items that those who prefer charges against American university administration regard as either important or interesting.

The next meeting of the New York State Teachers' Association will be held in the city of Buffalo, Monday, Tuesday and Wednesday, November 25, 26 and 27.

It is probable that the precedent of last year will be followed in the closing of all schools including and west of Rochester, and boards of education will give their teachers time to attend this important educational meeting. An exceptionally strong program has been prepared and every department of school interest will be represented in the section meetings from the kindergarten thru the university. A large attendance is expected.